RECORD OF PROCEEDINGS OF A

COURT OF INQUIRY

CONVENED AT

TRIAL SERVICE OFFICE PACIFIC

BY ORDER OF

COMMANDER IN CHIEF

UNITED STATES PACIFIC FLEET

TO INQUIRE INTO A COLLISION

BETWEEN USS GREENEVILLE (SSN 772) AND

JAPANESE M/V EHIME MARU THAT OCCURRED

OFF THE COAST OF OAHU, HAWAII

ON 9 FEBRUARY 2001

ORDERED ON 17 FEBRUARY 2001

AS AMENDED ON 22 FEBRUARY 2001;

26 FEBRUARY 2001;

1 MARCH 2001; AND

9 MARCH 2001

At Trial Service Office Pacific
Naval Station, Pearl Harbor, Hawaii
Thursday, 8 March 2001

The court met at 0801 hours.

PRES: This court is now back in session. Counsel for the Court, your remarks, please.

CC: Sir, let the record reflect that all members, parties and counsel are once again present with exception of Legalman Second Class Wright, the court reporter. Legalman First Class Leather is our court reporter for this morning. I'd also like to remind everyone again, please speak as slowly as you can and into the microphones to allow our interpreters to provide the best possible simultaneous translation.

PRES: Counsel for the Court, any procedural matters?

CC: None from the court, sir.

PRES: Counsel for the Parties, any procedural matters?

Counsel for the CDR Waddle party (Mr. Gittins): None from CDR Waddle, sir.

Counsel for the LCDR Pfeifer party (LCDR Stone): None from LCDR Pfeifer, sir.

Counsel for the LTJG Coen, party (LCDR Filbert): No, sir.

PRES: Then we're prepared for cross-examination from counsel for Mr. Coen?

Counsel for Mr. Coen (LCDR Filbert): Yes, sir.

PRES: You may proceed.

CC: The bailiff will call RADM Griffiths to the stand.

[The bailiff did as directed.]

CC: RADM Griffiths, good morning, sir. If you would please retake your seat in the witness box, and again I remind you, sir, that you are under oath.

[The witness resumed seat in witness box.]

Charles H. Griffiths, Junior, Rear Admiral, U.S. Navy, was recalled as a witness for the court, was reminded of his oath, and examined as follows:

CC: LCDR Filbert, you can begin your cross-examination.

Counsel for LTJG Coen, party (LCDR Filbert): Thank you. Good morning, RADM Griffiths.

WIT: Good morning.

CROSS-EXAMINATION

Questions by the LTJG Coen, party (LCDR Filbert):

Q. I want to begin by calling on your experience and expertise in submarine operations and ask you questions about the initial periscope search that was done by LTJG Coen. I think you testified over the last couple of days that when you do this initial periscope search, normally it consists of three rapid sweeps, is that right?
A. Yes.

Q. And during your investigation, does the evidence that you uncovered show that LTJG Coen had done those three sweeps?
A. My evidence would indicate that he did.

Q. And when a--the Officer of the Deck does those initial sweeps--I know it is not exact, but how about how long would each sweep consist of?
A. Approximately 8 seconds.

Q. And during the investigation, did it appear to you that LTJG Coen had done the sweep somewhere around that amount of time?
A. Yes. I had no exact way to judge, but my evidence would indicate that he did the initial search correctly.

Q. Okay. Thank you. Now--and this is what I wanted to ask you about was how--when you do this initial sweep, what type of ranges are you going to be looking at when the periscope is coming out of the water? Now--this is obviously very fundamental for you, but when the periscope first breaks the water, the height of eye would be zero, is that right?
A. Yes.

Q. It would be zero? And then as the periscope comes up, the height of eye increases and so the range in which you can see would increase as well?
A. That is correct.

Q. Does that make sense? Can you tell us, based upon your experience, how long it takes for the periscope to reach the ordered depth--in this case of 60 feet?
A. Starting from which depth?

Q. Starting from when it breaks the water to when it gets up to the ordered depth?
A. Highly variable, probably measured in seconds.

Q. Measured in seconds?
A. A brief number of seconds.

Q. In this situation, GREENEVILLE was at what speed when it was coming up for periscope depth, do you recall that?
A. I believe 6 knots was ordered and the speed would have been probably just under that because of the angle on the ship, but approximately 6 knots.

Q. 6 knots, well knowing that, can you give us an estimation about how long it would take for the periscope to reach the maximum height it's going to reach at the ordered depth?
A. Well, the ascent rate is the primary determinate of that. And that would be a function of the relative relationship of the ship's buoyancy to neutral buoyancy and also the angle on the ship, the length of time that angle had been on the ship, how much rise forces were being applied by planes; a number of variables. So again, I don't have a thumb rule I could give you that would be able to bound that very well. But again, I think it would be a brief number of seconds.

Q. Okay, so--and I understand what you'd said. You cannot be exact about that, but at least for--let's say if there were three sweeps at 8 seconds a piece, there's 24 seconds that LTJG Coen would have been on the periscope--that a portion of that time he would not have been--the periscope would not have been at the ordered depth and so his range would have been less during that period. Is that right?
A. Yes. The higher the scope is, the farther you can see and vice versa. So he would have had an increasing range to horizon as the scope head window starts coming above the surface of the water during the sweeps.

Q. Now, you've talked for a couple of days now and we've had testimony about what the conditions were like that day. And tell me if I'm wrong, but you testified about the swells that were occurring that day--that there was a hazy background on that day as well. Is that right?
A. Yes.

Q. And that the EHIME MARU was basically a white vessel and that there was a bow aspect for the most part in relation to the GREENEVILLE?
A. Yes. I'd say about half of the length of the EHIME MARU would be visible based on her starboard 30 or so angle on the bow over the conversion tracks, or less.

Q. Given those factors that I just talked about and also the length of time at which LTJG Coen had to do his rapid sweeps, and factoring in the fact that the periscope is raising for part of that time, would it have been difficult for him to have seen the Japanese vessel when he was doing those rapid sweeps in surfacing?
A. Well let me use the perspective that the subsequent observations by the Captain, which included shallower depth and at one point at high-power and of course the Captain is a much more experienced periscope operator, did not see EHIME MARU when conditions would have been more favorable to see it, and the ship had stabilized from the initial ascent where safety and the heat of the command of emergency deep or no close contacts is the order of the day and the focus. So, all those circumstances went by, the Captain had more of an opportunity than the Officer of the Deck to see it and the Captain did not. So I would say, it is reasonable to assume it would have been difficult for the Officer of the Deck to see the EHIME MARU in the brief searches he conducted.

And back to your earlier question--the implication was what is the range you're really focusing on in this initial search? And I think the highly subjective, but experience based answer I would give you would be, the sight of 2,000 yards; roughly the real range of EHIME MARU at that point in time or closer because the immediate collision threat is the focus of the Officer of the Deck.

Q. Right, when he's doing this--this rapid sweep? Is that what you are saying?
A. Yes, that's what I am saying. And I think that's the

reason the Captain transitioned to a different type of search to enable his whole focus to move out beyond that safety range, if you will, to a broader perspective.

Q. Now your investigation--LTJG Coen, I think you said before, yielded the scope to the Commanding Officer after he had done these rapid sweeps, is that right?
A. That is correct.

Q. If LTJG Coen had been able to do the rest of the procedure when you come to periscope depth, can you tell us what sort of search he would have done at that point--based upon the procedures that are in place?
A. Well, let me first caveat my answer by saying that the procedures that we generally have in place, driven by our training and the Naval Warfare Publication, is mission oriented or tactically oriented where stealth is of importance. We have no straightforward procedures where the entering precept is, safety is all you have to do today. Stealth is not important. So there is some art and science license you must take from the guidance in the books to translate to how you would conduct a search in these circumstances. If anything, your rigid training will keep you more inclined to not depart from the guidance because we inculcate that training so routinely.

Nevertheless if you use the guidance strictly, it would require 90 degree sectors in high-power, alternating with low-power more rapid searches full circle, and then back to the next sector in sequence so that over four sectors of searches you've completed full circle. Each of the sectors is defined as 45 seconds. So you are talking roughly 3 or 4 minutes of effort to do a high-power search with intervening low-power searches. And again, the guidance also talks about intervening air searches in low-power and that is NA here, not applicable. So, you have to make some allowances to depart your values and that would be a very conservative search by the Officer of the Deck in these circumstances where safety is paramount.

Now when I say conservative, if he is going to depart from those, he would probably not have to break the search up into sectors and not have to have intervening low-power searches and perhaps get it all done more quickly. But some variation on that theme is probably what he would have done--that is what at least I would have done.

Q. Yes, sir. When you said earlier, that based upon your experience and your investigation that LTJG Coen had done these

rapid sweeps correctly, did you find any evidence through your investigation that LTJG Coen, if he had continued on with his periscope search, would have done that incorrectly? Any evidence that he was not going to carry on and do what you just said?
A. I think broadly speaking the ship was well trained. Both the Captain and Exec had high standards of performance they expected from their watch team and they would have trained their officers to do the searches well and I have no reason to suspect that he would not have, but I have no basis to go further than that.

Q. Thank you, sir. Now during your investigation you received statements from lots of different people and--those statements, did they contain descriptions of what type of watchstander LTJG Coen was?
A. Yes.

Q. Can you tell us what those descriptions--what they said about him?
A. Yes I can. They generally implied that Mr. Coen is a very deliberate watchstander. Of all the junior officers in the Wardroom perhaps the most deliberate--that is both criticism and praise implied at the same point, because the criticism is if they need to get things in a hurry he is probably the worst junior officer of the Wardroom to get you there in that fashion because he is so deliberate, but the strength of that characteristic is that he doesn't ever skip steps. That if it says to do the following steps before you reach the end of evolution, he will do all those steps, and he can be relied on to be meticulous. So, because the most proficient officer you could devise outside of heaven would be a combination of alacrity and effective efficiency, you can say that this is a strength and a weakness in Mr. Coen.

Q. Did more than one person tell you that about LTJG Coen--or not to you, but in the investigation?
A. Yes.

Q. Now I want to move to another area that, as far as your experience, could be an interest here. And it relates to what was known by fire control in relation to what LTJG Coen was doing in Control. So, I want to start by asking a question. I would like to look at Exhibit 4 there if you would, sir. And I'm pointing to this block right here where it says 1337. Now based on your investigation, the ship proceeded to periscope depth at 1337 or right around there, is that right?
A. That's correct.

Q. I would like to go ahead and--well can I get this exhibit marked and also bailiff, once you do that, please distribute copies to the members.

[The bailiff did as directed.]

RADM Griffiths, what I'm having marked there is a portion of the Deck Log for 9 February. Now during your investigation--I could be wrong, but I didn't see in your investigation that you had the Deck Log as an enclosure to your investigation?

CC: Excuse me, LCDR Filbert, could we wait until it is marked.

CR: For the record, this will be marked as Exhibit 33.

Counsel for the LTJG Coen, party (LCDR Filbert): Thank you. Bailiff could you please publish the exhibits to the members, please?

[The bailiff did as directed.]

CR: Do you need this back?

Counsel for the LTJG Coen, party (LCDR Filbert): I would like to hand it to RADM Griffiths.

[The bailiff did as directed.]

CC: Commander, have the other parties been provided a copy of that exhibit?

Counsel for the LTJG Coen, party (LCDR Filbert): Sir, I am doing that right now.

[The bailiff did as directed.]

Q. Sir, my question was, during the investigation was the Deck Log an enclosure to your investigation?
A. My understanding is it was.

Q. It was? Okay. Well, I pulled this page from the Deck Log and I would like you to take a look at it and tell me if that appears to be a Deck Log for a portion of the day on 9 February, and I know this is not the best copy, but it's the best I could----
A. It does appear to be that.

Q. Okay. And, sir, what I would like you to do is look down at the entry for--where it says 1336?
A. I'm there.

Q. It says MD60. What is MD60?
A. I think it is M--Mike, delta 60, and it means make your depth 60 feet. It's the recording of an order from the Officer of the Deck.

Q. Okay. And then to the right of that, what does it say there?
A. Raised Number 2 scope.

Q. Okay. So, where is this deck log maintained in Control? Can you tell us that?
A. It is maintained in the after plotting station in the vicinity of the Quartermaster's chart. I believe. That is where a normal ship would do it and I assume that is where the GREENEVILLE kept it.

Q. Okay, so can we say at least somewhere in Control it's maintained?
A. Yes.

Q. So, if we look at this reconstruct here, it says 1337, and then the Deck Log is pretty consistent with the reconstruct as far as the time that the ship proceeded to periscope depth. Do you agree with that?
A. Yes.

Q. A minute or so, one says 1336, one says 1137.
A. I agree.

Q. If the ship was proceeding to periscope depth at 1336, can you tell us what LTJG Coen as Officer of the Deck would be doing at that time?
A. Just prior to that time he will be making his assessment of the contact picture and decision on the course to come to periscope depth on and getting the concurrence of the Commanding Officer to do that.

Q. And where would he be physically--if the periscope is raised, where would the Officer of the Deck be at that time?
A. Well, once the periscope is raised he would be with the periscope, manning it--on the Conn in the center part of Control. And the point I was referring to is just prior to where he would raise it, so I am setting the stage for--and once he raises the scope, it will take his attention thereafter although he can hear events around him, he can talk to the watchstanders while he's on the scope. The scope is engrossing--it takes a lot of his attention. And certainly he won't be looking at fire control displays or sonar displays and so forth thereafter. He'll keep his eyes on the scope thereafter.

Q. And that was my question. Once he is on the periscope and the ship is ascending to periscope depth, he wouldn't be leaving the periscope to go to fire control to look at any displays or anything like that?
A. That would not be likely and if he did leave the periscope, he would not have ordered it--ordered the ship to periscope depth during that period unless the Captain was on the scope and the Captain, for whatever reason decided to man the scope at this step. It is the Officer of the Deck's responsibility--at that point you would not expect him to leave the scope. However, I want to just make clear before he would ever go to the scope he would have made a decision concurrently with the Commanding Officer that he understood the contact picture, he understood the course to come up on, in order to ensure the ship's safety and he was able to free up his attention span to be solely on the scope at this point--or mostly on the scope at this point because he'd already made the decision it was safe to go to periscope depth.

Counsel for the LTJG Coen, party (LCDR Filbert): I understand. I'd like to have another exhibit marked in order here. Here's the exhibit to be marked [handing exhibit to bailiff]. Here's copies for the members and the parties.

[The bailiff did as directed.]

CR: This will be marked as Exhibit 34.

[The bailiff distributing copies to members and parties.]

Q. Now RADM Griffiths, I don't think you've probably seen this document before, but I could be wrong. Do you recognize that document?
A. I haven't seen it before. It is a pretty granular display of the fire control systems solutions on Sierra 13 for that hour prior to collision--or actually less than that time, including the period of the collision and----

Q. This information came from the reconstruction afterwards and I would like you to take a look at the second page of that document. And sir, if you look at--and you would know here, but the time here is Zulu time; which would--and tell me if I'm wrong would relate back to--if it says 2346 it would be 1346 local time?
A. [Reviewing exhibit.] Correct.

Q. If you look at the bottom of page 2 of that--I'm sorry. I wanted you to look back to page 1 of the document near the bottom where it is talking about--about 4/5's of the way down in the 2331 range. At that time the range for Sierra 13, according to the fire control solution was 14,000 yards. Is that right?
A. That's what this says.

Q. Okay, and then if you look at the rest of the page 1 at the bottom and the top of page 2, the range that is occurring in fire control--in this fire control solution is increasing from 15,000 to 16,000 yards, is that right?
A. That's correct. That's what this says.

Counsel for the LTJG Coen, party (LCDR Filbert): Could I have Exhibit 6 and Exhibit 7 put up please?

[The bailiff did as directed.]

Q. Now RADM Griffiths, if you look at the entry that says 23:37:33 and it has a range of 16,000 yards. Do you see that, sir?
A. I do.

Q. Can you with your pointer--can you show us on Exhibit 7 where that would show up on the right hand side diagram there--16,000 yards?
A. It would be approximately right here.

Q. Right here? If you look back at Exhibit 34, sir, the next entry at 23:37:48, do you see that?
A. Yes.

Q. The range drops to 4,000 yards. Is that right?
A. Yes.

Q. And so that would be--and I'm pointing right here--down here where it has dropped to 4,000 yards?
A. Yes.

Q. Okay. At that time, according to the reconstruct, LTJG Coen would already been on the periscope?
A. That is correct.

Q. Now once Petty Officer Seacrest, who was the Fire Controlman on watch there, once he got that information, what should he have done according to--based upon your experience?
A. In my experience, what Petty Officer Seacrest should have done and again, I'm not sure if the ship is already in the bi-stable mode of ascending to periscope depth or not, and that has a bearing on perhaps what he should have done because he may have felt constrained to silence if he realized that range should be in-spotted when the ship was ascending. And so, the exact moment he made that change is an issue. But, let's assume that it was prior to the order to make your depth 60 feet. He should clearly have forcibly told the Captain and the Officer of the Deck, “I have an indication that Sierra 13 is much closer than previously thought and a potential collision threat,” and then it would be--frees the problem--let's do some further refinement of target motion analysis and figure that out, I would conjecture. In other words, both the Captain and the Officer of the Deck and the Exec who were all in the vicinity of being able to hear that report, had it of been made, would have reacted professionally to it to further ensure the issue was resolved before proceeding to periscope depth.

Now, if--in my opinion, if the ship was already on the way up, then the FT of the Watch has a tough call to make. A critical piece of information, but the very important criteria to remain silent because of the need to go either emergency deep or no close contacts mode in effect, and so he would have had a

tougher decision to make, but even so--because this was such a large down spot and we are now talking inside your rule of comfort--your range of comfort--inside 5,000 yards, if you will, to go to PD. He probably still should have said, “I have a down spot to 4,000 yards on Sierra 13, recommend aborting periscope depth.” And then the Officer of the Deck and Captain and XO could have made that decision, especially the Officer of the Deck and the Captain. Hey, you're right, make it at 150 feet. Even after you start to ascend to periscope depth from 150 feet, there is an opportunity to abort that.

Now depending on the dynamic forces of the ship, you may go much shallower or even to PD before you accomplish that abort, but nevertheless you get that eventually aborted and you bring it back down to 150 feet--give yourself time to resolve. So it would have been, in my opinion, appropriate to make that report even after the ship was in the ascending mode and everybody was theoretically to remain silent and waiting the OOD's call on emergency deep or no close contacts. And frankly, even if the ship was at periscope depth and the Officer of the Deck had already said no close contacts--at that point, at the very latest, the FT of the Watch should have spoke up and said, “that may be, but I think we got a close guy here, Sierra 13 is at 4,000 yards, take a look at this bearing and let's get that resolved,” and so obviously, that would have still been of great value to the Officer of the Deck and the Captain.

Q. If the Officer of the Deck and the Commanding Officer had received that information, either while ascending or while they were conducting their periscope search, could they have taken actions in order to avoid a collision with the Japanese vessel?
A. Most emphatically, yes, that was a key piece of information that they were not provided. Now, the Officer of the Deck would have to have received it verbally because he’s consumed on the scope. He has no ability to go over and see the fire control system and his only way to hear that would be verbally.

Q. Now, sir, after the Commanding Officer was conducting his periscope search, he called away--he told the Officer of the Deck, I should say, call for an emergency deep.
A. Correction. I think he actually said the words himself, which is appropriate for the scope operator to say no matter who is on the scope. It can be an under instruction qualifying FT of the Watch on the scope for a break for the OOD. Whoever is on the scope must say emergency deep if he thinks there’s a threat of collision, and so in this training scenario, of

course, it would have been appropriate for the Captain in this instance to say it himself, and I believe that’s what he did.

Q. Thank you for that correction, so the Commanding Officer, himself, actually called it away. Is that right?
A. That’s my understanding.

Q. Now once that happens, where would you expect the Officer of the Deck to be during the--that evolution?
A. Well----

Counsel for the LTJG Coen, party (LCDR Filbert): Can you put on Exhibit 6, I'm sorry.

[The bailiff did as directed.]

WIT: Yes, in general my guess is the Officer of the Deck would stay near the periscope stand--I'm circling it here, unless he had a reason to go evaluate a ship Control problem issue in this area or a fire control issue in this area. And so in general though with the Captain on the scope--with the OOD having the Conn, he doesn't want to leave the Captain stranded. If the Captain is tired of being on the scope, the OOD wants to be right there to relieve him and so he'll probably be on the periscope stand, but he is free to roam.

Q. Sir, could he also--it may be appropriate you said I think for him to move over to where the Diving Officer of the Watch is to monitor what's happening with the ship going down?
A. Oh, during the emergency deep phase?

Q. Yes, sir.
A. I'm sorry--so we have ordered emergency deep already?

Q. Emergency deep, right. What--where would the OOD--where would you expect him to be during the emergency deep evolution?
A. I would expect him to bias his location to the port side where he could generally oversee that the correct actions were being done automatically by this team here--Control Team.

Q. And in this situation--we all know that emergency blow was ordered as well.
A. Subsequently.

Q. Subsequently right. Now once that happens, is there any capability for it--for the ship to not go to the surface once that evolution begins?
A. It would be an extraordinary effort to try to keep the ship down. I mean with the maximum propulsion and the planes all trying to hold the ship down you could probably do it for awhile, but not for very long and it would be with those extraordinary efforts only. Once you put that much air in the tanks, the ship's going up.

PRES: Counsel, follow-up here. In my questions early this week, I asked that same question, and my impression was the answer was if you--it was irretrievable as I recall based on the condition of the GREENEVILLE at the time it was called away. Are you consistent with that?

Counsel for the LTJG Coen, party (LCDR Filbert): Yes, sir.

WIT: And I still believe that is true.

PRES: Thank you.

WIT: I was describing a more generic condition where the ship, for whatever reason, wanted to counter act the positive buoyancy forces in the ballast tank with extreme use of propulsion in some type of test of wills, if you will, between that buoyancy and propulsion, but there would be no reason operational to ever do that. In this case, the GREENEVILLE did not have that kind of maximum propulsion for it anyway.

Q. I want to move to a new area, sir, regarding, LTJG Coen's experience as an Officer of the Deck. Now I believe you said yesterday or maybe the day before, that in the hour proceeding the collision, the Commanding Officer was essentially telling the Officer of the Deck what he wanted done and then LTJG Coen was acting as an intermediary. Did I get that right?
A. Yes.

Q. Now, during your investigation, did you learn when LTJG Coen had qualified as an Officer of the Deck?
A. Yes.

Q. When was that?
A. My recollection was it was the previous summer approximately June 2000--summer 2000.

Q. Now you talked a little bit yesterday about how much underway time there was for GREENEVILLE in between--well in the fall of 2000. Were you able to determine how much underway time there was between the time LTJG Coen became qualified as an OOD and the collision?
A. I did not evaluate that amount of underway time. I don't know.

Q. You looked at the summary of the interview of the Commanding Officer, CDR Waddle?
A. Yes, I did.

Q. How did CDR Waddle describe LTJG Coen's experience as an Officer of the Deck? Do you remember that?
A. There was no in-depth description. There was a statement to wit that the Officer of the Deck needed careful watching because he was inexperienced--something to that order.

Q. Now you talked yesterday about--and you mentioned it again today that as you gain experience on the periscope you become more proficient at operating the periscope and using it in the most effective manner. Is it your experience that OODs as they gain experience are more quickly able to assess what's happening around them to determine what should be done and what should be questioned?
A. Well in general, yes. A typical officer will grow in proficiency as he gains experience.

Q. Now in this case there is evidence that the Commanding Officer told the Officer of the Deck he wanted to be at periscope depth in 5 minutes. Is that right?
A. Yes.

Q. Now based upon your investigation, your experience, did that affect LTJG Coen's ability--I don't want to say ability, but the degree of forceful backup he was able to provide the Commanding Officer in coming to PD?
A. I think that a Commanding Officer telling a young Officer of the Deck something like that would influence the manner in which the young Officer of the Deck would execute his duties. I think the young Officer of the Deck would get the impression that he needed to operate with great alacrity, maybe more than he's used to.

Q. Regarding the issue of coming to periscope depth in 5 minutes, I think the first day you testified that--you said that the Officer of the Deck--that was in his statement, that the Commanding Officer told him to come to periscope depth in 5 minutes, so that's what he wanted to do. I'd like you take a look at enclosure (3) to your investigation, and it's up there on the witness stand.
A. [Reviewing exhibit for enclosure (3).] For LTJG Coen's statement?

Counsel for LTJG Coen, party (LCDR Filbert): Actually, sir, it is the XO's.

WIT: Okay.

CR: For the record, may I ask what that is, please?

Counsel for the LTJG Coen's party (LCDR Filbert): I'm sorry, it's Exhibit 1.

Q. I would like you to look at the first page, the second large paragraph there and to yourself read the first sentence.
A. "When completed with angles and rudders", is that the statement?

Q. Yes, sir.
A. "When completed with angles/rudders, overheard CO tell Officer of the Deck make preps for periscope depth. Want to be at periscope depth in 5 minutes." I guess that's an important word, "want". It doesn't imply "do it", it implies that is the desires of the CO; which is a less directive influence than, "do it."

Q. I understand that's what--would that indicate to you then that at least the XO also heard this 5 minutes in relation to periscope depth?
A. That was my belief after reading the statement.

Q. Sir, you talked at several times during your testimony about the length of time the search--the periscope search was done in relation to not being able to see the Japanese vessel. Looking at the facts of what happened, what was the--what was the event that determined the length of time the ship was at periscope depth and doing periscope searches?
A. Well, the functional end of the periscope depth period was the Commanding Officer ordering emergency deep. Clearly the

process that lead to is that the Commanding Officer in determining his periscope search had achieved its purpose.

Q. So as you--I think you said before that that is an order which is really unquestionable. It has to be done?
A. Yes. I believe when the CO gives that order, that defines the end of the periscope depth period very definitively.

Counsel for the LTJG Coen, party: May I have just one moment, sir. Sir, I don't have any further questions. Thank you.

PRES: Counsel?

CC: Sir, we'll now proceed to Mr. Gittins, you have a----

Counsel for CDR Waddle, party: Sir, I just have a couple of brief follow-up questions in light of the questions of counsel, if I may.

CC: Mr. President, what I would propose is that we proceed with redirect by the members and then we go ahead and give Counsel for the Parties the opportunity to cross-examine again.

Counsel for CDR Waddle, party (Mr. Gittins): Very well. I didn't realize that we were going to go redirect back on these issues. I apologize.

PRES: We intend to redirect on some issues and then we'll cross.

Counsel for CDR Waddle, party (Mr. Gittins): Very well, sir. Thank you.

PRES: Is that acceptable, party?

Counsel for CDR Waddle, party (Mr. Gittins): Yes, sir.

PRES: Okay. Well, let's go ahead. RADM Griffiths, we're going to proceed to some redirect questions from the members.

MBR (RADM STONE): Good morning, Admiral.

WIT: Good morning.

REDIRECT EXAMINATION

Questions by a court member (RADM Stone):

Q. I'm going to be addressing five areas on the redirect with you. The Chief of Staff's role onboard GREENEVILLE; the watchbill onboard GREENEVILLE; watchstation requirements on the boat; operational risk management onboard the boat; and best judgment of a Commanding Officer and how that relates to responsibility and accountability of Commanding Officers in U.S. warships.

The first topic is the Chief of Staff. The court has not yet heard testimony from RADM Konetzni regarding the duties and responsibilities of CAPT Brandhuber on 9 February. And therefore, further assessment is required to determine whether the Chief of Staff was actually serving as Senior Officer Present or Senior Officer Present Afloat, both of which have distinct responsibility in Navy Regs, or whether he was serving as a senior embarked passenger. Do you agree, RADM Griffiths, that further investigation by the court is required in this area?
A. Yes, sir, I do.

Q. Do you agree that, regardless of the responsibilities of CAPT Brandhuber on 9 February, that they in no way relieved the Commanding Officer of GREENEVILLE of his unique responsibilities and accountability for the GREENEVILLE's actions on 9 February in ensuring safe operations?
A. I do agree with that.

Q. The next topic, with regard to the GREENEVILLE watchbill. The GREENEVILLE watchbill was addressed yesterday by LCDR Stone. And an impression was perhaps made that this document is not as important to this investigation since it was not specifically delineated as a document required to be produced following a collision. I want to take a moment to talk about this document and its role onboard our U.S. Navy ships and submarines. It is not an insignificant document. The watchbill is one of the first documents that an investigator will want to see after an accident, for the following reasons: It is a signed and dated document submitted usually by the Senior Watch Officer or the Chief of the Boat; reviewed by the Executive Officer; and often approved directly by the CO, the Commanding Officer, unless designated to the Executive Officer to approve. It contains the name of the watchstation and is annotated to reflect qualification levels, such as fully qualified or under instruction.

We all learned as junior officers that an unsigned watchbill meant next to nothing, they are strawmen, they are indeed proposals without signature. The signed, dated version is the one that counts, and the approving signature is where one goes to determine accountability on our ships. These signed watchbills are retained onboard our ships and submarines and are a particular higher interest to our Commanding Officers and our Executive Officers. Not being able to produce a signed watchbill is unusual, it is not the norm or the standard for our Navy. RADM Griffiths, would you agree that a signed and dated watchbill for 9 February is indeed an important document to this investigation?
A. I agree.

Q. With regard to watchstation requirements which were also discussed yesterday. Qualified watchstanders are a crucial underpinning and are indeed the foundation of how we operate our ships and submarines at sea. Two out of three qualified watchstanders or three out of four qualified watchstanders is not the standard. The number of qualified watchstanders is not a suggestion to the Commanding Officer. It is in fact a requirement in order to ensure our ships and subs operate safely. Commanding officers that deviate from that requirement put their ships at added risk. Do you agree, RADM Griffiths, that meticulous attention to detail in the proper assignment of qualified watchstanders in accordance with existing directives is crucial to safe operations at sea?
A. I do agree.

Q. My next topic is going to take a few minutes because it is very important. Yesterday we heard Mr. Gittins talk about how the Commanding Officer, GREENEVILLE, stressed three themes onboard the boat: safety, efficiency, and backup. It was then mentioned that these three themes are related to the Navy's requirement for operational risk management. This in my mind is a critical aspect of this inquiry. And my point would be that these themes are just words. They are just rhetoric unless they are translated into actions by the Commanding Officer. Which brings me to the events of 9 February in the collision between EHIME MARU and GREENEVILLE, which resulted in the deaths of nine people.

RADM Griffiths, you have testified that a significantly large number of the GREENEVILLE crew was left ashore which included key qualified watchstanders such as Sonarmen. You have told us about an important display unit that was out of commission, which significantly reduced the situational awareness of those

in the Control Room. We are also now aware that not all the positions in Sonar were manned with the appropriate and required qualifications. You advised us about, what in your professional judgment, were actions that could have been taken to decrease risks. Such as broaching the boat, thus elevating the periscope height of eye and thus increasing the chance of contact detection. Where spending more time in the periscope search thereby also increasing the chance for contact detection. Where spending more time on the target motion analysis legs to increase contact clarity and also provide an enhanced bearing for visual detection through the periscope. These are all risk mitigators that were not fully taken advantage of by the GREENEVILLE.

Of additional concern is of course the fact that visitors were placed, or allowed by the ship to be in positions that reduced the overall situational awareness. And also impaired the flow of information between watchstanders in the Control Room. This was a self-imposed additional risk factor. We in command have all been there. We know it is up to us to ensure visitors are positioned in such a way as to allow our key watchstanders to effectively do their jobs. We are given command to ensure this happens. Failure to do so means additional risk to our operations.

Additionally, RADM Griffiths, your testimony did not reveal the existence of a command climate where key people step forward and stated freely and vocally when they thought improper procedures were being used or safety was being jeopardized. Which is a key cornerstone of operational risk management. I therefore ask you, sir, in your opinion, do you agree that the events of 9 February on GREENEVILLE are reflective of a command that actually increased it's risks while conducting these underway operations rather than minimized and reduced those risks in accordance with the spirit and intent of the Navy's operational risk management philosophy?
A. I think I would have to do further investigation to be competent in my answer. I did, after all, only spend 3 days. So for example, my comments about the environment on the ship and the conduciveness of watchstanders to backup the Commanding Officer, I'm not confident I really know the truth there. I only had kind of an inkling, and I'm looking for inklings in my 3 day investigation. So to some degree some of the areas that you sight require further investigation before I could competently say that this ship did something wrong or didn't. And some of the other areas that you sighted in that very concise summary I do agree that the ship made some mistakes, and

perhaps mistakes in judgment. But again, the devil's in the detail and I didn't get to the full level of detail on who was onboard and who wasn't; were the qualified people within the lifelines of the ship that day; had they put them in the right place or not. I didn't quite get that far. So I will give you a qualified answer that I agree, but I think I need or the court needs more study before it makes a final opinion in those areas.

Q. Thank you. And the last area I'd like to address deals with responsibility and accountability of a Commanding Officer in the United States Navy. Mr. Gittins mentioned a number of times yesterday that the Commanding Officer, GREENEVILLE, took actions based on his best judgment. I think it is important to talk about this term "best judgment" for awhile. RADM Griffiths, you are a former Captain of a U.S. Navy warship, as is VADM Nathman, RADM Sullivan and myself. Do you not agree that command at sea is a very unique and special responsibility?
A. I certainly agree with that.

Q. Would you also agree that one of the aspects that makes it special is that when you are in command you are making crucial decisions and that people’s lives are often dependent on those decisions being correct?
A. I agree.

Q. Now, whether an officer is in command of a submarine under the North Pole, or an aircraft carrier in the Adriatic, or a destroyer in the Gulf, or he is in fact commanding a submarine conducting an underway for visitor demonstrations, the Commanding Officer is fully responsible and accountable for his ship and crew? Admiral, would you agree to that?
A. Yes.

Q. The Navy provides its Commanding Officers with the ingredients needed to do their jobs. The Wardroom and crew, advanced high-tech equipment, applicable training, and procedures to ensure safe operations in war fighting proficiency. It is then the Commanding Officer's responsibility to form these ingredients into an effective team and properly execute assigned missions. Admiral, do you agree with that statement?
A. I agree.

Q. RADM Griffiths, now we come to an important point about the phrase "best judgment of the Commanding Officer". Because lives are at stake we hold our Commanding Officers to a very high standard. A CO's best judgment does not necessarily mean that that action conducted by him was prudent. A CO's best judgment does not necessarily mean the action conducted by him was safe. A CO's best judgment does not necessarily mean the action conducted by him was satisfactory or correct. I make these points because in the profession we are in of commanding U.S. warships, the Commanding Officer's best judgment or his good intentions is not the metric by which we measure or judge. In peace time operation where lives are at stake it is the outcomes based on prudent, safe, and correct actions that serve as the basis by which our Commanding Officers are judged and held accountable. That is why command at sea is so precious, why it is so challenging, why those who have had command cherish the concept of accountability for not only their own actions as Commanding Officer, but also for the actions of those it was their responsibility to have properly organized and trained.

RADM Griffiths, I myself have not yet reached a conclusion regarding the Commanding Officer of the GREENEVILLE's action because I have not yet heard all of the testimony and reviewed all the facts of the incident. I am therefore not able to affix responsibility or accountability. However, I thought it would be very important and useful to the court to provide comment on the term being used, "best judgment of the Commanding Officer" as it relates, what those of us who have had command view as our responsibility during peace time to conduct safe, prudent, and correct operations at sea. And to be held fully accountable for those operations. Admiral, as a former Commanding Officer I would welcome any comments you might have on the subject of the responsibility and accountability of command.
A. Alright, Admiral, I'll give it my best shot. I've laid awake for a month now at night thinking about this issue. Thinking about CDR Waddle, who is no doubt doing the same thing. CDR Waddle would never have been in command of the GREENEVILLE without having been placed in a position to test these very issues and has succeeded on countless times prior to the collision. And so we have an individual who commands similar, although more junior individuals of similar ilk and have similar aspirations, on the GREENEVILLE. And he had a bad day where some mistakes were made, from what I can tell so far, that accountability is an issue to examine. I think that he went through several steps--the ship went through several steps under his guidance that attempted to meet the appropriate requirements in order to maintain safe operations throughout that day. And

in my hindsight position, which is a lot easier position to have than to be going through it on the day of the collision with the ship, I found that there were no real steps missing, that the steps were just not quite far enough along the distance you would like that measure to be taken. But the measure was taken and it's an accretion of these small deficiencies in the length of these measures that added up with some terrible misfortune to culminate in a condition where we now have these accountability issues and this tragedy to examine. So, I understand what you're saying. I don't see any of these single measures as egregiously abused or missed or discounted. Yet I see a number of them that fall just short of where you would want the goal to be and they happen to add up in a very worst case way. So we in the aggregate have a collision. And that's what's so challenging about this case.

You have a ship that does operate well, that has that history of professionalism and excellence. You have clearly qualified and excellent people who intend to do well and mean to do well in their positions and responsibility on the ship. And yet you have this tragedy. So perhaps because of this equation of subtle measures not completely taken. And so this is a challenging case. But I'm sure that in the end of the day the court will come to appropriate conclusions based on a further review of the evidence.

MBR (RADM STONE): Thank you, Admiral. I have no further questions.

MBR (RADM SULLIVAN): Good morning, Admiral.

WIT: Good morning, sir.

Questions by a court member (RADM Sullivan):

Q. I'd like to build on RADM Stone's discussion of "best judgment" and drill down a little bit into the particulars that you were able to gather in your investigation in the GREENEVILLE collision. Yesterday the counsel for CDR Waddle discussed in great detail quite eloquently what a CO's best judgment is all about in the execution of his duties. He discussed the need for us as the Navy to give that CO the latitude to exercise his best judgment. In your opinion, do you believe that the Navy and our submarine force strongly support that position of trusting our COs to exercise their best judgment?
A. Absolutely, Admiral. They--we go out on independent operations with full confidence that those COs will be professional and successful. We trust them.

Q. Thank you. What I'd like to do now is examine this a little further and to look at, in my opinion, or what I feel is the foundation to allow this CO to make those sound judgments, to exercise his best judgment. In your opinion and with your long experience at sea, and your experience at sea as a Commanding Officer, can you give me what you feel are the basic tenants that underpin the foundation to allow a Commanding Officer to make those judgments, not only best judgments but good judgments?
A. One of the fundamental parts of that is that we give him the requisite training and experience. So first of all he has had a great deal of effort that the Navy has expended to train him, provide him formal and informal education to give him the prerequisite knowledge and qualifications. And that includes experience on sea tours. There are no short cuts to command. CDR Waddle did not skip XO, or skip Department Head, or skip junior officer time at sea. He had to do that or he wouldn't go to command. So that's the first tenet.

The second tenet is that you have to have demonstrated on your--ascendancy through the ranks as documented in your fitness reports that you exercise appropriate judgment and that you exercise interpersonal skills with subordinates and peers and seniors so that you’re able to get the maximum out of your crew and that you can get them to perform at the level that we require Commanding Officers to have their crews perform. So, you've demonstrated the leadership and the interpersonal skills capabilities up to that point in your career to be given command. And that's formal documentation in your record.

And then thirdly, you need to show through preparations for deployments and underways to your chain of command that you operate a ship in a way that should imbue confidence in your abilities. That you are able to take your crew and go through challenging hurdles, examinations and inspections once you are in command that only ships that are being properly run would do well in, such as the GREENEVILLE has demonstrated under CDR Waddle. So, you have to have kind of walked the walk once you're in command. I can go into a lot more detail, Admiral, but I think those are the basic tenets.

Q. Thank you. Would you also consider that when you talk about a ship's performance, that the standards that are used--part of the underpinning would be what established guidance there is to operate your ship? What procedural documentation or direction is provided by the chain of command? And even what our qualification standards are on our ship? Would you--well, would it be fair to comment that those are fairly universal across the submarine force?
A. Yes, sir, it would be fair to comment that they are universal and they all are high standards.

Q. So when we as a Commanding Officers make these judgments we're making the judgments based on a foundation of information, procedural guidance, and so forth, that provides the tools we have to make those judgments. Would that be correct?
A. Yes, sir. The guidelines that are in writing that govern how we operate our submarines are--have been developed in blood, if you will, over the long haul. And we have confidence that they are good guidance and good standards. And we would expect our ships to routinely follow them and they should depart from them at their peril.

Q. You mentioned departing from those procedures. Would it be fair to say, or in your opinion, that because we operate with standard procedures that a crew of a submarine can anticipate the needs of the Commanding Officer, anticipate the information that he will need because they have been schooled on a given procedure.
A. Absolutely. Forward thinking, looking around the corner is what we try to instill in all our crew so that they anticipate the needs--they anticipate the event and the needs of the Captain or the Officer of the Deck for that event and are therefore proactive in providing information in a timely fashion when it's needed or is critical.

Q. So would you call that forceful backup?
A. I would.

Q. Now as a Commanding Officer, certainly everyone of us who have had the privilege of being Commanding Officer, have had to operate, if you will, outside the norm to accomplish a mission. To use our best judgment. When you do that, as you eluded to, you take an added risk that your crew cannot anticipate your needs or provide you that forceful backup on occasion?
A. Yes, sir, and I think an appropriate analogy would be when I was going through Perspective Commanding Officer School my class was, and this is in the curriculum, had a lesson that was emphasized to us. And they used an example of a submarine that had had a grounding. And the issue was that the Commanding Officer had, for whatever reason, become totally in charge and had not recognized the inherent risks that when he does that his crew is in a position to not easily advise him to change his course, if you will. And so the recommendation to us was that if you're going to be in a situation where you become the Conning Officer, or where you take the Bridge, or where you do something where you have an unusually directive position that you would normally stand back from as Commanding Officer, that you need to put something in place to keep you honest because nobody's perfect. And so that general concept is you need your crew to back you up and ever the more so when you become officially quote "on watch", like the Conning Officer in an approach and attack.

Q. And would it be fair to say that, if you will, it's a two-way street. The CO backs up his crew and his crew backs up the CO?
A. Yes, sir. And before I get too uncomfortable here I just want to say these are areas that I think the court does need to pursue. I'm not comfortable that I have a good feel for that on GREENEVILLE, one way or the other.

Q. And I agree. And certainly speaking for myself there's plenty more to look at to be able to come to any of those conclusions. With that said I'd like to take a few minutes to examine the foundation that existed on GREENEVILLE on the day of the incident. And look at some of the underpinnings that the crew was expected to operate with. I'd like to walk through some of these and get your opinions.
A. Sure.

MBR (RADM SULLIVAN): LCDR Harrison, will you please have the court reporter mark the next exhibit.

[LCDR Harrison did as directed.]

MBR (RADM SULLIVAN): What I'm asking to be marked is a letter of promulgation covering NWP--Naval Warfare Publication 3-13.10.

CR: This has been marked as Exhibit 35, sir.

[LCDR Harrison handing exhibit to witness.]

Q. This is a letter of promulgation covering NWP 3-13.10, formerly NWP 77, entitled, “Submarine Electronic Optic Sensor Employment Manual.” Admiral, this NWP governs the use of the periscope, is that correct?
A. Yes, sir.

Q. After you've had a chance to look at this for a second would you please read the first sentence of paragraph 2 for the court?
A. NWP 77 provides operational philosophy and employment guidance for electromagnetic and optical sensors installed in submarines.

Q. In your opinion what does the word "guidance" mean in this context?
A. "Guidance" means here is the best advice we can give you on the issue and you should probably follow it, but you do have the authority to depart from it if circumstances warrant. But it's a good default way to do things if you don't have a better way to do it.

Q. So in other words it might be considered the submarine forces collective best judgment on how to operate a submarine?
A. Yes, sir.

Q. Why isn't this information a directive in nature? Why is it guidance?
A. Because the Navy for 200 years or more has always reserved the ultimate decision making for the Commanding Officer. And that's what we pay them to do and that's why it's a special job. Because no written guidance ever supersedes his best judgment.

MBR (RADM SULLIVAN): LCDR Harrison, will you please bring up the next exhibit to the court reporter.

[LCDR Harrison did as directed.]

CR: This will be marked as Exhibit 36.

[LCDR Harrison handing exhibit to witness.]

MBR (RADM SULLIVAN): What I've asked to enter into evidence is a portion of NWP 3-13-10. It deals with employment of the periscope.

Q. Admiral, yesterday CDR Waddle's counsel read paragraph 1-3-2, entitled, "Initial Search at Periscope Depth" as guidance for how to use--how to conduct a search at periscope depth. To refresh our memories will you please reread that section to the court?
A. The entire paragraph, sir?

Q. Yes.
A. "Initial Search at Periscope Depth. As soon as the head window breaks the surface at least three 360 degrees sweeps of approximately 8 seconds per sweep should be made in low-power, trained near the horizon to quickly determine the status of close contacts or nearby floating objects. This initial search is intended to defend against eminent collision and is not intended as a complete horizon search. If a collision is observed an emergency deep should be ordered and the periscope lowered. If safe operation is indicated the announcement "no close contacts" should be made." Okay?

Q. There's a little bit more on the next----
A. I'm sorry.

Q. You do have that?
A. "Following the initial surface search several rapid low-power sweeps at maximum head prism elevation and several more sweeps at 35 to 40 degree elevation should be made to detect the presence of aircraft."

Q. Now, Admiral, I'll ask you to read that--the very next paragraph in this instruction. Paragraph 1.3.3, entitled, "Continuous Visual Search."
A. "Continuous Visual Search. Continuous search commences as soon as it is determined that safe periscope depth operations are possible. The recommended process for continuous search is as follows: A 360 degree horizon sweep in low-power; a 90 degree quadrant horizon search in high six times power; another 360 degree low-power sweep; a high-power search of the next 90 degree sector; and so on. Each step in this process should be done slowly. Approximately 45 seconds per sweep. A periodic high elevation search is only necessary if the regular

continuous search has been interrupted for more than 1 1/2 minutes."

MBR (RADM SULLIVAN): Okay. Thank you. I'd now like to introduce another--or reintroduce another exhibit. Court Exhibit 1, entitled, "GREENEVILLE Commanding Officer's Standing Orders Number 6."

[LCDR Harrison handing exhibit to witness.]

Q. Admiral, if you could would you please read the first sentences from the paragraph in Section 0615, paragraphs foxtrot and hotel entitled, "Ascent to Periscope Depth."
A. If I can first ask if there is any issues of classification from me reading from this?

Q. No there isn't. This has been cleared by the court through us.
A. Would you repeat again, Admiral, the site--the paragraph you want me to read from?

Q. Paragraph 0615, sections Foxtrot and Hotel.
A. "Foxtrot. Conduct an initial low-power search per reference (b) for close surface contacts. Report "no close contacts" after the low-power search if that is the case. Do not report "no close contacts" until completion of a 360 degree low-power search of the horizon. In the event of a close contact announce "emergency deep". Mentally determine the safety range at which you must go deep to avoid detection or collision. A useful thumb rule in these situations is: One in low, time to go; or Four in high, time to fly. In other words, a typical warship with mast head height of 100 feet would be 2,000 yards. If it's subtended one division in low-power and it would be prudent to go deep to avoid collision should the target zig toward unexpectedly. Note: Fishing vessels and trawlers usually have a mast head height of 30 to 50 feet. Using the "one in low" thumb rule above for a 30 foot mast head height trawler may not be appropriate technique since range will be too close, 600 yards for one division, low-power, with 30 foot mast head height. After an initial good safety sweep change depth to the deepest tactically usable depth and reduce speed to the minimum allowable or desirable for the tactical situation. You must be proficient at maintaining depth control at periscope depth at sea state +2 knots." And did you say also "G", Admiral?

Q. No. Down to "H", please.

A. Conduct a periscope search following the guidance of reference (b). At night or during reduced visibility refrain from using the TV camera as it reduces light intensity by 60 percent. At night use the image intensifier to pick up faint lights. Ensure a qualified night adapted periscope operator is standing by prior to its use and turn over the periscope search to him after you have used the image intensifier. Do not use the image intensifier on objects that are backlit, as this will prove ineffective.

Q. Okay. Thank you. For the court can you--can you sight what reference (b) is that is listed on the front of the Standing Order?
A. It is NWP 1-13.10, “Submarine Electronic/Optic Sensor Employment Manual,” which is the new nomenclature for the NWP 77 that I just sighted.

Q. Okay. Thank you. Now, Admiral, in your opinion do these sentences in the Standing Order direct the Officer of the Deck to perform both an initial search at periscope depth and a continuous visual search per NWP guidance?
A. It does.

Q. So, again, just to make sure I'm not confused. It's not sufficient to just conduct an initial search when you go to periscope depth. That the NWP just discussed provides guidance in both the CO's--both the NWP and the CO's Standing Orders directs the Officer of the Deck to conduct both these types of searches. Is that correct?
A. That is correct.

Q. Okay. Thank you. Now I'd like to move to another area. This is dealing with the CEP plot, Contact Evaluation Plot. Admiral, yesterday the counsel for CDR Waddle focused on the fact that own ship's maneuvers were continuously plotted on the CEP. Was contact information continually plotted on the CEP?
A. No.

Q. Is it--is this plot, the CEP, in maintaining this plot is contact data supposed to be continuously plotted?
A. Yes.

Q. I'd like to introduce--you already have it over there, I guess. Admiral, if you would look at the CO's Standing Orders for Periscope Depth Operations, the one you have in your hands, Order Number 6. If you would go to Section 0630, entitled, “Contact Reporting.” Please read paragraph 1, focusing on the second sentence. What does it say?
A. The second sentence in Paragraph 0630, part 1 says, "The Contact Evaluation Plot will be maintained continuously." And it goes on to say that, “While at periscope depth contact reports will be made in accordance with Article 225 as amplified by Paragraph (a) below.” And then it goes on to amplify that.

Q. Okay. Thank you. In the plot that USS GREENEVILLE had on the afternoon of 9 February were only own ship’s course maneuvers plotted consistently. Contacts were not plotted continuously? What is the value of that plot to contact management?
A. There were periods where the contacts were plotted continuously on the CEP, but unfortunately not in that hour prior to the collision. The value is zero if it only has own ship's course on it.

Q. In your opinion, how hard would it be for a ship as capable as the GREENEVILLE to maintain her CEP plot when she had a total of three surface contacts?
A. I think that's in the easy category as far as a scale of easy to hard based on the type--number of contacts ships were trained to manage.

Q. You have testified a number of times the AVSDU, the sonar repeater was not working, would you have expected the Commanding Officer or the Executive Officer or the Officer of the Deck to have relied more heavily than normal on the CEP as a contact management tool?
A. Yes, I do think that that's appropriate and also the fire control system.

Q. I realize that this is somewhat speculation, but would you have thought potentially, you might have stationed a second Fire Controlman to maintain the plot as a sole function or possibly station a Ship's Contact Coordinator to assist the FTOW in the performance of his duties?
A. I don't think it's logical to have expected they would have stationed a Contact Coordinator in the submerged condition. I just haven't seen that generally done. I do think it's logical to have expected them to augment the watch as needed to meet the standards.

Q. You have mentioned that for a good portion of an hour prior to the collision that contact information was not plotted on this plot. If one of the individuals I previously mentioned, the CO, the XO, or Officer of the Deck were using it as a contact management tool, would you have expected them to have corrected the fact that it wasn't being maintained considering the caliber of officers that they are?
A. Yes.

Q. Would you have expected them to, at a minimum, counsel the FTOW about the problem of not maintaining his plot? Or ask if he needs additional assistance to maintain his plot?
A. Yes, I would.

Q. How hard is it for Sonar to track three surface contacts?
A. That's, again, easy on the easy to hard range.

Q. How hard is it for a typical FT of the Watch to solve solutions for three surface contacts?
A. That's closer to the middle of the easy to hard scale if he’s got to come up with refined solutions and he's doing it all alone. So, it's about an average amount of challenge.

Q. How hard is it for the Officer of the Deck, even an inexperienced Officer of the Deck? Or in the case, of the Commanding Officer, an experienced submarine officer, to maintain situational awareness in a situation with three surface contacts?
A. That should be well within the norm for their abilities.

Q. So in your opinion, the contact situation that we know after reconstruction that existed on the afternoon of 9 February, that should not have been that taxing or overly confusing. Is that correct?
A. The function of time is very important here. Obviously, if you greatly abbreviate the amount of time all of these watchstanders have to do those tasks, than it becomes taxing and challenging. But given the requisite time, no, it should not have been taxing and challenging.

Q. Okay. Admiral, in your opinion, do you consider a Ship’s Sonar Search Plan as being required to optimize Sonar search performance?
A. I do.

Q. Okay. I want to shift gears again slightly Admiral. Admiral, in your opinion, do you consider a Ship's Sonar Search Plan as being required to optimize sonar search performance?
A. I do.

Q. Are you aware the GREENEVILLE Commanding Officer's Standing Order Number 5 requires a Sonar Search Plan for every underway?
A. I was not aware of that, but I would certainly would have expected it and I'm not surprised.

Q. In past testimony, you stated that you were unable--or you did not ever see a search plan, is that correct?
A. Yes, but in fairness, I did not attempt to either. It may have been provided and I just didn't get to review it or maybe we didn't ask for it or--there is a time element here too in the way I was investigating. Frankly, I just did not have time to look at that.

Q. So, none of your interviews revealed a lack of a Sonar Search Plan?
A. I cannot comment one way or the other on a search plan.

MBR (RADM SULLIVAN): Mr. President, you know, I agree with what RADM Griffiths is saying and the importance of this search plan. I'd ask if we could get our counsel to have that presented.

PRES: We'll have Counsel for the Court specifically go back to the ship and specifically ask for the product. I'm not sure, is that a document? What does that look like--it's a----

MBR (RADM SULLIVAN): I know you can get various forms, but I'm sure our technical----

CC: Yes, sir.

PRES: Well, the ship will know what it is, so ask the boat for----

CC: I'll contact the Acting Commanding Officer, sir.

PRES: Okay.

Counsel for LCDR Pfeifer, party (LCDR Stone): Sir, my understanding is the squadron already has that, it was provided to the squadron, so you might want to check with----

PRES: Well, we've had a couple of things where the squadron was supposed to have it. "We're looking for, we haven't found it yet," so we'll look both places. Okay?

MBR (RADM SULLIVAN): I only mention it because I think it's an important document that I need to do my deliberations.

PRES: Sure.

Q. Admiral, in prior testimony, we've discussed in great detail the fact that a Sonarman under instruction watch was functioning as a Work Share Operator in Sonar. Isn't it one of the principal functions of that particular watch, the classification function, sonar contacts, such as identifying screw configuration, turn count, type of vessel?
A. Absolutely.

Q. In my review of your investigation, Exhibit 1 of the submarine Sonar Logs, I notice a number of things that I'd like to just have you comment on. First, nearly all the contacts gained during the morning watch, were classified with significant detail by the Sonar Watch; however, the last classification of any contact occurred at local time 1149 with contact Sierra 11. In the afternoon, there were no classifications of new contacts Sierra 12, 13 or 14, other than simple reference to surface contact. Would you expect a qualified and proficient Sonar watchstander to be able to classify at least some, if not all, of these surface contacts, in your opinion?
A. They certainly should have been able to attempt to do so, there are some contacts that are difficult, even though they're surfaced and make a lot of noise, they're difficult to classify and so they're may have been acoustic reasons why those targets weren't cooperating in that regard, but the operator's--to answer your question, yes, I would've have expected them to classify at least some of those contacts, especially in that span of time.

Q. In your experience, at this point, I haven't seen the watchbill, what is typically watch relief, the changing watch, on submarine?
A. About 1130 until 1200, somewhere in that time frame, the Plan of the Day had a watch relief specified around that time. I can't remember exactly the time, 1230--1130 to 1230, somewhere in that range.

Q. Admiral, I'd like to just shift to that Plan of the Day, which is part of that Preliminary Inquiry also. I noticed when I read it a couple of things I would just like you to comment on. First, I noticed the ship's delinquent list, could you explain what a typical submarine delinquent list is, what the purpose of that is?
A. Yes, sir. The watchstations on the ship, across the whole ship, the under instruction watches are provided a goal date to qualify and their progress is measured incrementally towards that goal to complete qualifications unless they would perhaps fall behind the interim goals, they're considered delinquent and for whatever reason, the ship requires them to put extra time into qualifying, in other words, some of their discretionary time is devoted to further qualifications efforts to get them back onto the pace.

Q. I noticed that of approximately 13 people that six of them are Sonarman and SN Rhodes, who I believe was to be Sonar Watch under instruction during the time of the collision is on there twice. Once for Passive Broadband Operator I believe, and another time, I'm not sure what it's for. In your investigation, were you able to take the time to figure out his actual qualification status as far as delinquency and how far behind he was?
A. No, sir, I wasn't.

Q. Admiral, I'm almost done here, I just have a couple of more things, if you could please refer to CO's Standing Order Number 6, paragraph 0610, entitled "Clearing Baffles." Admiral, could you read that first paragraph for us?
A. "Stay on course at 150 feet until there is enough data on the AVSDU and the time/bearing mode on the MK 81-2 displays to determine actual bearing rate and the direction of motion, parenthesis about 3 minutes."

Q. Okay, in your reconstructed track, Admiral, how long was the USS GREENEVILLE at 150 feet on that first TMA leg?
A. Approximately 2 minutes.

Q. At 150 feet?
A. There may have been some depth change portion at the start of that 2 minutes, and the 2 minutes is approximate also.

Q. Alright. RADM Griffiths, you stated earlier about--concerning the loss of the AVSDU and the frequent visits to Sonar by both the Commanding Officer and the Executive Officer to compensate for that loss, and in your opinion, that wasn't--you did not feel that was enough to maintain situational awareness. What other things would you have expected or possibly could have been solutions to the loss of having that vital piece of equipment?
A. Well, it may have been adequate for the CO and XO situation because they were mobile, they had the picture in Control as well as Sonar, but the--I don't think it would've been adequate for the Officer of the Deck for example for his situational awareness because he wasn't able to go into the Sonar Room with the same degree of mobility. Well, I guess the first thing that I would have done is that I would have made target motion analysis events more deliberate, more lengthy, more discerning, more emphasized. The use of the fire control system in conjunction with sonar would need to be emphasized to even more than before because I don't have the picture of Sonar that I'm constantly looking at. So, I would pay more time looking at the fire control system than normal and perhaps augment the watch or slow things down, or both.

MBR (RADM SULLIVAN): Okay, thank you. One last area here, counsel could you bring the chart over, the large-scale chart for the Admiral to view?

[LCDR Harrison did as directed.]

WIT: If I could just go further?

MBR (RADM SULLIVAN): Yes, sure.

WIT: I would have been very uncomfortable as the Officer of the Deck or the Commanding Officer to know that I didn't have a fully qualified watch in Sonar when I was able to oversee them less because the Officer of the Deck and I did not have this display in Control. So, I would have considered upping the level of experience in, providing that raw data to the fire control system. So, when I say augment the watch, it's Sonar and or Fire Control Watch, of course, you mentioned the CEP already.

Q. Admiral, could you take a look at this chart, and just familiarize yourself with the operational area and what Penguin Bank is located?
A. [Reviewing exhibit.] Alright.

Q. And based on knowledge where the ship was operating, how far away roughly was shoal water, based on their depth of operations?
A. I would say about 5 miles from shoal water, that's rough, 4 or 5 miles.

Q. In your experience as Commanding Officer of a submarine, would you have an overriding consideration or desire to stay in the situation they were in to stay away from that shoal water, is 5 miles a significant distance for navigation capabilities of this submarine or a submarine of this class?
A. I would feel less comfortable than if I was in the middle of the ocean, but these are accurate Nav suites on these submarines and 5 miles is a healthy distance and my Nav uncertainty would be much, much smaller than that. So, while I would not dismiss it, and I would be mindful of it throughout the underway, I would not be petrified of operating there, including the test depths and the high-speeds.

Q. So, I assume that's why you felt, during your investigation, that navigation wasn't a real significant consideration for actions taken during the surfacing evolution?
A. Yes, sir and also of course, it was not a navigation tragedy, it wasn't a grounding or something of that nature where navigation would be the focus. So, I kind of used a course lens, looked at navigation and said I don't see any major problems there and they stayed within their assigned area, didn't approach shoal water dangerously and the buoy was also--there is a buoy down here [pointing at exhibit] that they were also mindful of on their Nav picture and took steps to avoid. So at that point, I no longer considered navigation, kind of a process of elimination and triage.

Q. Okay, thank you. Admiral, when I reviewed the Plan of the Day of 9 February, which is the only information I can find for the agenda for this embarkation of visitors, I noticed that the event of the emergency deep is not listed as a state of event. In your investigation, was this training evolution of emergency deep, does it running ad hoc fashion by the Commanding Officer or was there any notification of the drill provided to the Executive Officer or any other member of the ships company which is not a practice of a submarine conducting training drills.
A. I think it's fair to say, I have no doubt of one way or the other on that issue. I would expect the CO and XO to have already had this plan discussed in advance and there may have been others brought into the codery. These can be run

unannounced by the CO, that is his option and it still has training value so, this is kind of a unique drill where I might take exception that the routine is to all the drill planning in advance and so forth. This is one of the few drills that I've seen submarines run with--that is basically ad hoc and you don't lose too much training value as long as people are in the right watchstations to experience it, at least to a degree. I know you do like to have observers stationed and get comments, but this is a relatively easy drill to, submarines do it routinely, many submarines do it at least once a watch when transit to get the training level up. And again, I need to remind everyone that this is a drill that also helped the ship achieve it's goal of quickly getting down and quickly emergency blowing before the surface picture would decay. So, in summary Admiral, I think the CO was well within limits here, even if he told no one to do this.

Q. But comment--would you comment on the training value with monitors or at least some people observing the drill, what does that do for the training value of the drill?
A. If you have station monitors, then you have impartial factual observer's of what people do and then you measure that against what they should have done and you come up with constructive criticism and lessons learned and promulgate them and you get the most training value by approaching the drill in that fashion.

Q. Again, in your experience as both an XO and Commanding Officer--Commodore and a Group Commander, is it very often that a Commanding Officer runs drills without at least notifying his Number 2?
A. No, that would be a real unusual case. Again, that may have happened here, I just don't know.

Q. Is it unusual here to run that type of drill without notifying the senior rider embarked, such as Chief of Staff?
A. Yes, sir, that would also be unusual and I don't know whether that happened either.

Q. Alright, one final question, Mr. President. When it comes to the Executive Officer's duties, what would you characterize the XO's principal duty as second in command, second senior officer onboard the submarine?
A. His principal duty is to fundamentally run the ship so that the CO is able to have the freedom to think the lofty thoughts that the CO should think on broader issues and the mechanics of running the ship. But, perhaps if you want to say, what is the

most important thing he does, the most important thing he does is he in every way backup the Commanding Officer.

Q. You feel he backs up the crew too?
A. I--they're synonymous. These are close knit integral units, CO and crew and backing one up, means backing the other up.

Q. When you say backing up, what does that really mean, it could mean a lot of different things to a lot of people, in your opinion, what is backing up, what does that mean?
A. That means being the devil's advocate for the Commanding Officer's decisions and providing him the foil of the alternative options, the downsides to what he's choosing to do so that you're not just making him feel better about the decisions he's already decided to make, but that you're perpetually providing him a constructive other sides of the coin. And making suggestions to make even better decisions or better policies or better approaches. And this runs the gamut from rudder orders, split second operational issues to broad long term approaches to policy. Like what do we want--where do we want to move this ship and crew over the next year and everything in between, it's a continuum of responsibility while they're serving together.

MBR (RADM SULLIVAN): Thank you, I have no further questions.

PRES: RADM Ozawa, did RADM Sullivan cover your questions.

MBR (RADM OZAWA): Yes, he covered all my questions. I have no more comments, sir.

PRES: RADM Griffiths, I'd like to cover a couple of areas with you, I would like to cover--go back to RADM Sullivan's point about the Executive Officer. I'd like to cover some roles of the Executive Officer and his duties. I'd also like to get into what I consider the command--the performance of the command on the 9th of February, and specifically the role the Commanding Officer and the performance of the command and how he characterized--I know he sends strong signals to his crew about what he's going to do. Let's go to the Executive Officer first and after we do this, we'll go to recess and I think this will be the end of our redirect.

Questions by the President:

Q. The Executive Officer, I think we could describe in general terms as, Mr. Backup, Mr. Clean-up, for the CO, but I believe the Executive Officer has some very clear functions--functions he's supposed to inform the Commanding Officer of significant issues and matters with the command, would you agree?
A. Yes, sir.

Q. Okay, he's supposed to make sure the command is organized, make sure things are running efficiently for the Commanding Officer, who should be really worried I think about operational matters and long term planning so we have the Executive Officer consistently out there making sure the command is organized day to day to support the CO's view of how his command is going to be utilized.
A. Yes, sir.

Q. Okay, that he has what I would call--he's out there to make sure the performance of the crew and their duties are professional and that they're well-trained, would you agree?
A. I would.

Q. I also think he is responsible for the conduct and the way the crew looks, their personal appearance, their ability--their conduct ashore and the good order and discipline of the crew. Would you agree?
A. Yes, sir.

Q. So I find some things interesting here. The Executive Officer, I believe, approves the Plan of the Day on USS GREENEVILLE.
A. Yes, sir.

Q. So it kind of goes to, RADM Sullivan's point about the ad hocness of this emergency dive. I wonder if the XO was ever informed of this emergency dive. Was it reflected in the Plan of the Day? You have already indicated the Commanding Officer has every right to use this as a drill to make sure his people are trained because there is an opportunity here, but was the XO inadvertently misinformed or was the XO--did he seek this information out. Was he surprised, in your view, by the emergency dive?
A. I really do not know. That's something for the court to look at.

Q. On that same POD then, which the XO signs, it shows crew members that are delinquent in their qualifications. So when he signs that, he would be aware, I think the crew on the GREENEVILLE is around 150?
A. Approximately.

Q. So, that is a significant number of men. We have all had commands of that size or in some cases larger. We don't always know everyone, but my expectations were the would know the men fairly well and so when he signs the POD he would note what men are delinquent and he would know almost by name or certainly by face in some cases, the men that are delinquent in that list?
A. Yes, he would know them. So would the Captain.

Q. Alright. The Executive Officer has a role in the approval of the watchbill. My understanding on the GREENEVILLE is the Commanding Officer signs the watchbill, but the XO, in organizing the ship, he has a responsibility to make sure that the watchbill is correct and if there is a member on that watchbill that's delinquent and not qualified, you would expect some compensation on the watchbill before it ever went to the Commanding Officer about compensation or a response anyway out of the Executive Officer to that man that was not qualified or under instruction, or delinquent on the watchbill.
A. Yes, sir, but let me make sure I don't create a misconception. The issue of delinquency may be slightly misperceived here. It is a measure of the pace of the person that is qualifying, but it does not really comment on the person's innate abilities or proficiency. It is an indirect measure of that and it's the fact that he is either qualified or under instruction is really, to me, what counts here.

Q. Exactly, and in fact, I agree with those comments. I see it as an alertment. There is an opportunity here because you know the individual’s dink, there is an alertment here to the fact that he is under instruction and it should be elevated because of the XO's knowledge when he signed the POD and then saw, I assume, a parallel document of the watchbill with the same name. The Executive Officer is responsible for training, not only to make sure that people are progressing properly, so he has an interest in who is under instruction, he's got an interest in who is delinquent and he is--I'm not sure how often a Executive Officer of a submarine takes these reports, but there is typically a monthly training report for the boat about the progress of the crew.
A. Yes, and I would guess that it's a weekly event to determine delinquency status.

Q. Okay. So the XO would be involved in the decision to leave a significant number of the crew ashore for simulator training, as described by the counsel for, I believe, CDR Waddle yesterday, that he would be engaged and he would be part of that decision. In fact, he would probably be the over arching member of the crew to make that decision about the numbers. Did he--to you knowledge, did he keep the Commanding Officer informed of the number and the quality in the sense of rating qualification that was going to go ashore for training?
A. I didn't have time to pursue that communications between the two on that issue. My assumption is that both were aware of the tradeoffs and who they left on the beach.

Q. I want to move on to one last area and then we will go to recess. I would like to talk about some--because I am kind of confused here. I'm not quite sure--there is a lot of conflict for me right now about where this command really was that day. We have heard a lot of testimony about the aggressiveness, the knowledge, the forthrightness, what I would call the operational efficiency of this Commanding Officer. But on the other hand, I see things that look like he's violating his own standing orders. It confuses me when things like that happen and so I am not sure, so I would like to go through some measures here, things that I'm seeing right now and you can comment Admiral Griffith wherever you want to make sure that I understand or you can just say that you see it the same way, or you make whatever comment you want.

What I'm looking at here is a measure of what I call the performance of the command in terms of, is it disciplined, is it to standard, or inside that discipline does it border from highly disciplined to sloppiness in some cases? We heard yesterday about a comment about a 6 foot difference for the depth of the ship. I'm not sure where that was coming from, but it seems to me like a submarine would be really concerned about its actual depth in the water. Particularly when it comes to controlling periscope height. Is that true?
A. Absolutely.

Q. So if you have a 6 foot delta out there running around because you have a new standard or measurement or whatever is was, I don't know what it was. I need to know more about it as described from counsel for CDR Waddle because you have a digital--or an electronic measurement of keel depth and you have a mechanical measurement of keel depth for a submarine. So, if you have a 6 foot delta out there running around--did you see that reconciled anywhere on the ship? Was it reconciled in the logs? Was it reconciled in a Temporary Standing Order? Was the Officer of the Deck--was anyone aware of this that they used it in terms of their actual procedures or operations that day?
A. I did not have time, in fact frankly, I didn't even realize there was that disparity until I was in testimony, it didn't become uncovered during my investigation. I thought it was a much smaller error. That is a large error and if that's the case then I'm sure the ship has that listed as an issue to fix.

Now the standard approach for a difference from reality that large would be to use a formal process, to place a out of calibration, which is we call it an orange sticker because it happens to be a little orange sticker and you place the delta on there from truth so that the operators can routinely see what the real issue is and that is one option that I did not have time to pursue whether they did that or not.

Q. I take your point, 6 feet is a big deal.
A. It's a lot.

Q. And if it's a big then there ought to be some placard, some notification, some modification to sense that there is a difference of depth out there that the watchstander should be aware of even they knew the ship backwards and forwards because you're going to have some turnover and you have new people, people that are not qualified and since it's a big deal, I would expect to see some sort of, and I would like to find this out, I would like the counsel of the court ask the boat about this, to find out what was done about that 6 foot delta.
A. And also when it was found because if it was as they were getting underway, it could be like the AVSDU you know last minute issue we will fix it when we get back to port as opposed to why are they living with this.

Q. I'm confused about what I thought would be adequate compensation for the loss of the AVSDU. This seems to me like it is a significant instrument and display for the control of the ship by two men that will control the ship, and that is if you stand up there on the periscope stand and you want to know what your sonar information is at a glance while you are doing other things for both the Officer of the Deck and anyone else who has the periscope, including the Commanding Officer, then if you have lost this display, the compensation that I understand right now appears to be more frequent visits to Sonar. To me that doesn't quite, from what I've heard so far in testimony, that seems to be like a relatively poor level of compensation for the loss that I don't see any additional watchstanders in place. Do you share that concern?
A. Yes, sir. As I listed in the investigation, I think that was not adequately compensated for. The range of compensation, in my opinion, should have been more than the ship chose to take.

Q. So then this becomes additive. You see a loss of an important display and then you see a poorly maintained CEP, or for the last hour, apparently there is no contact information on the CEP. It says to me, well wait a minute, this is a high standard, right? The Commanding Officer would use that frequently. The Officer of the Deck would use it all the time. So what does it tell the crew? If the CEP is not properly maintained about how important that display is to the control of the ship. Does it imply that it is not important anymore? Seems to me that was a very important piece of information that wasn't available to the Officer of the Deck or the Commanding Officer.
A. The CEP is an important plot and it was not maintained well for that last hour and that was a standard not being met.

Q. But, what does that say about the Officer of the Deck or the Commanding Officer in terms of the standard that they are carrying out that day? This is an important instrument, or display, and it's not maintained properly, okay, because I am assuming a little bit that the Fire Control Technician of the Watch was quite busy and in some cases, physically, use that comment, physically; there was a physical barrier to actually get to it. So if it is not being properly displayed what does that tell--is that a strong signal to the rest of the crew that the standards that normally apply don't apply today in Control?
A. Well, I don't know how general to make the lesson this was emanating throughout the ship, but I think that the Officer of

the Deck, the XO, and the Captain should not have tolerated that plot not being maintained. Obviously, that was a standard not being met, and on that occasion they were not meeting it and that is not the standard. It could have been a true value to them.

Q. I know we have talked about the Sonarman under instruction and the lack of oversight. It kind of goes to the POD issue. For me it goes to the issue for the watchbill, which I still want to see a signed copy of. It goes to the fact that he was under instruction sometimes but not all the time. It seems to me this goes to another part that I see in terms of what I would call the discipline of the command that day and that is the lack of information being passed by watchstanders to the Officer of the Deck in that chain of operational control that we showed on the board the other day. I do not see that information being passed particularly during critical periods of time.
A. Well Admiral, I need to throw up a caution flag here. We haven't talked about the things that were happening correctly between Sonar and Control, the reports from the supervisor on contacts. I think that was generally happening or else I would have commented on it as a problem in my report. So, the fact that we have less than the full qualification that we would like on both consoles, at least on one console in Sonar, is a factor. How important that factor is, I really don't know as I testified earlier. Did that play a role in them being less aware of sonar, I don't know, but it certainly set them up to be one more obstacle in the way of doing it the best that they could have.

Q. I see this a couple of ways right now because I am still trying to figure this out. I don't see critical information being passed and I'm not so sure sometimes if that information was even available to the watchstander because it seems to me like time here is one of the factors. That time wasn't there for them to develop their own situational awareness of their particular function and therefore were not passing significant points of information like the right 6 or the fact that they thought they had a contact close aboard. There is a sense in my view right now that this timing issue is getting to be very important here because the watchstanders weren't able to build in their own way, their professional competence, that they had an issue to make it available to the Officer of the Deck.
A. I strongly agree with you on this issue of time frame. The shorter you make everything happen, no matter how diligent the subordinate watchstanders are, the less they will be able to pass, the less opportunity they will have to pass information--or first notice that it is critical information to pass. I do

think that is a threat that has run through this last--well certainly since the completion of the high-speed turns until the collision. That is a central issue--is the abbreviation of the steps so that developing and passing information on the critical issues--the critical parameters was not fully allowed to develop.

Q. Well, this kind of goes again to standards. The reason why it was not fully developed, in my understanding right now after RADM Sullivan's review, we have the Commanding Officer and the Officer of the Deck both violating the Commanding Officer's Standing Orders about length of time at the 150 feet and the length of time to build TMA and the length of time to be at periscope depth or preparing to go to periscope depth. So, I'm seeing that right now as a violation of their own standards, their own standing orders. Would you agree?
A. I would agree except that I want to make one caveat that the Commanding Officer when he directs things, you make the assumption that he knows the standing orders, he wrote them and he signed them and he is still choosing to deviate so therefore that's what he wants. So when you say he is violating his standing orders he is the one person onboard who has the authority to violate them and that is not a real violation. For everybody else it is, but he is the guy directing the deviations. This is a great area to look at on testimony with the Commanding Officer.

Q. I agree with your comment, Admiral, the Commanding Officer has the right to modify his own standing orders anytime he needs to because he thinks he understands what is going on, but I don't see the basis for that understanding yet because I don't see the information being passed. I don't find evidence right now of that, evidence being passed to make those decisions to change his own--to violate--not violate because I don't think the CO does violate his standing orders. I agree with you. I think when he chooses not to be inside of his own guidelines for--it's a guideline then for the Commanding Officer, but the fact that its done at critical times--the building of the situational awareness prior to going to periscope depth and then it's done at a critical time at periscope depth and they are done consecutively, is what I find a little bit confusing right now, about the standards that it sets, some sloppiness that I just wonder sometimes. My understanding was the NAV Plot was erased?
A. That is correct, Admiral. My sense is it was erased because they are operating in one small area and frequently the track comes back on itself and there is no way to make it

distinguished if you don't erase the previous history to make it--the new track appear. And, that was the story of why it was erased is they were in a small area for a long period of time so that it made some sense on the current position they would erase previous data and that's routine. I think that's the reason it was erased.

Q. Well, okay----
A. And I wouldn't call that sloppy----

Q. Okay----
A. Except that now we have a legal record, and of course----

Q. Of a collision----
A. The Quartermaster doesn't immediately think of that----

Q. Yes, like ripping it off and putting a new one up because I know--I think what you're suggesting here is in the SAR, that was very important to have good location etcetera, etcetera, and that was critical data.
A. And they are staying in a small area then, of course.

Q. And you've got to do it, so he's trying to get it out of the way. It just makes me wonder about, well you just had a collision and there is a built-in sense, you know, some significant event that you know you want to make sure the logs are right. You do not want to be admin at this time. You don't want the ship going to admin, but you certainly want the ship paying attention to details on some of those things because it does help reconstruction and it's of value to the Commanding Officer; it's of value to the Quartermaster of the Watch, it's of value to the XO, it's of value to leaders to the watch teams inside maneuvering for example. My sense was here that they probably should have made or--I'm not sure about--it's a conflict of whether it was discipline or not. There are some other things I still want to see that--that watchbill signed and I still want to see that Acoustic Search Plan, and my understanding--the Sonar Search Plan, the issue--how do you view the lack of the acoustic--was it the acoustic tape--work tape? Is that an issue?
A. Did that help cause the collision, no. But is that an indicator of poor standards being maintained in Sonar, yes. That tape should be running when the ship is underway submerged and it's not just a mission focus tape, it is intended to be run all the time and that is a standards issue. It didn't cause the collision but it is a sign post.

Q. Okay. One of the things that interests me, and I think we are going to have to learn a lot more about this one, is this comment made about the fact that the ship was using a waterfront practice, I think is the way it was characterized, for watchstanding. That somehow the boats on this waterfront have adapted a standard for watchstanding. I think that was the comment made by counsel for CDR Waddle, about particularly Sonar Watch. It seems to me that standard should apply to the weapons configuration of the boat, the fire control configuration of the boat, or the sonar configuration of the boat and not just some waterfront standard. Am I confused on this point?
A. If the counsel was trying to allude that all the ships really don't have two qualified operators if they're A-RCI BSY 1 sonar ships all the time and that therefore that's become accustomed practice on the waterfront to have fewer than the required watchstanders, I just don't believe that. I mean, that I cannot fathom. If that's really what the whole waterfront is doing, then that's a widespread problem and it doesn't make it right on any individual ship. If that is what they are alluding to--I don't know. I indicated that I would be shocked if that was the case. That would be ignoring where the standards should be.

Q. Would you agree that the CO's accepting more and more risk as he--as that particular operations those days did not allow his watchstanders the time to build their situational awareness or their competent picture at their watchstations?
A. I think that is central to the story here that this abbreviated time frame makes everything harder no matter how good you are and that is one of the central themes I see as relevant and I don't know why, I called it artificial urgency, and you know maybe the ship was planning to be late coming back and then if that was the case why the urgency for some other reason. I think the abbreviated time frame made it harder for everybody to do their job well.

Q. One last question. We've heard the comment from yesterday from the counsel, and we've heard the comment today on questions today from RADM Stone on best judgment. Using best judgment, based on poor, flawed, or inaccurate data, doesn't mean that the use of that best judgment eliminates risk, or in an absolute since is good judgment or is prudent. Would you agree with that?
A. That's a very generic discussion, but, yes.

PRES: Okay. This court is in recess for the next 20 minutes.

The court recessed at 1017 hours, 8 March 2001.

The court opened at 1037 hours, 8 March 2001.

PRES: Counsel before we get into re-cross examination, I think it's important to----

CC: Sir, may I make an announcement?

PRES: Yes, please.

CC: Let the record reflect that all members, parties, and counsel are again present. I would remind everyone to speak slowly and into the microphones. Mr. President?

PRES: I want the parties to understand and I want the counsel to understand that we think it's important that--and we believe it's very important for the counsel and for the parties in the court to understand that the members are still in the discovery phase of facts. I believe what you saw in the member's re-direct are open concerns about the many factors that may have contributed to the events on the GREENEVILLE, on 9 February. After 4 days, the members feel a lot like RADM Griffiths, that we still have many avenues to investigate. I think it's important for you to understand that. Okay. We'll proceed now to re-cross examination, counsel for CDR Waddle.

Counsel for CDR Waddle, party (Mr. Gittins): Yes, sir.

PRES: Can we call RADM Griffiths?

CC: Yes, sir.

[The bailiff did as directed.]

CC: RADM Griffiths, sir, if you would retake your seat in the witness box, and again I remind you, sir, that you are under oath.

WIT: I understand.

PRES: Admiral, we're about to proceed into re-cross examination from the Counsel for the Parties, and counsel for CDR Waddle will lead with his re-cross.

Charles H. Griffiths, Junior, Rear Admiral, U.S. Navy, was recalled as a witness for the court, was reminded of his oath, and examined as follows:

RECROSS-EXAMINATION

Questions by counsel for CDR Waddle, party:

Q. Sir, I'd like to first start to ask you questions that came up during LCDR Filbert's questions to you, on behalf of LTJG Coen. LCDR Filbert asked you, sir, the question about FT1 Seacrest's performance on 9 February, and I believe you said that FT1 Seacrest should have told the Captain or OOD or both that the Sierra 13 range had been updated to 4,000 yards.
A. Yes, I did say that.

Q. That is one of those places where a forceful call may be required for safety of ship, would you agree?
A. Yes.

Q. Would you also agree that your investigation uncovered that that did not happen?
A. I would.

Q. Would you agree, sir, that had that call been made, it is probable that this accident would not have occurred?
A. I'd go beyond that, I'm certain it would not have occurred. It was a key piece of data. And if I can, at the point where the Commanding Officer told the Officer of the Deck to go periscope depth, the Officer of the Deck was obviously focused on the periscope, but I really think at that point, the Commanding Officer had also made a determination that he had the information that he needed to safely go to periscope depth. So, he was also focused now on getting ready to take the periscope because I'm sure he had intended to do that, as I would have, to really verify that visual look. So their focus had shifted inboard to the periscope stand and at that point it would have taken an oral report more likely than the CO breaking that concentration to go look at the fire control system, so that oral report should have come to both of those individuals and had they not received it, they probably would not known that information.

Q. Sir, concerning the Officer of the Deck's experience, as an Officer of the Deck, counsel asked you about a statement that was attributed to CDR Waddle is contained in the results of interview that were prepared after CDR Waddle's interview, and that enclosure (2) to the Preliminary Inquiry, page 4, it's the very last paragraph attributed to CDR Waddle.
A. Page 4?

Q. Yes, sir, page 4 of enclosure (2), which is CDR Waddle's results of interview, attributed to CDR Waddle. It says, quote, concerning the OOD, LTJG Coen, CDR Waddle stated that he was a newly qualified OOD and that he regularly had to tell him what to do. First of all, sir, you were questioned about results of interviews yesterday. You didn't actually conduct the interview of CDR Waddle, did you?
A. No, I asked to interview CDR Waddle and he declined.

Q. And that was on advice of counsel?
A. Absolutely.

Q. CDR Waddle had been interviewed by CAPT Byus, correct, sir?
A. Correct.

Q. Along with LCDR Harrison, correct, sir?
A. Correct.

Q. Sir, are you aware that neither CAPT Byus' notes nor LCDR Harrison's notes contained anything remotely looking like that statement, concerning the OOD? CDR Waddle stated that he was a newly qualified OOD, and that he regularly had to tell him what to do?
A. No, I wasn't. However, I know that CAPT Byus had to read that statement, so in his mind he felt that he heard it from CDR Waddle, in some form that made this statement an accurate repetition. But, if it's not in the written notes, it's not in the written notes.

Q. CAPT Byus took nine pages of notes, sir, and there's nothing remotely that resembles that in those notes. Are you aware of that?
A. I am now. But I think it's fair to say and this is a fairly important issue what was recorded from the interviews with regard to the handwritten notes and what ended up in the typed versions that I received, and again, it was very edited and deliberate process in the people who are doing this, Byus, Harrison, and their administrative help, if they used it to come up with this being their best recollection, and so when they

hand these over to me, that's what they felt these were. Whether they're handwritten notes or not, because the writer didn't literally record every word said.

Q. As you just indicated, the notes and the results of interview are the best recollections of secondhand information about what CDR Waddle may have said immediately after the accident. Would you agree with that, sir?
A. It's secondhand to me.

Q. Would you agree, sir, that it would have been beneficial to you, and likely beneficial to this hearing to hear from CDR Waddle, personally, about what he actually believes, what he actually saw, and what he actually did and why he did it, in this hearing?
A. I think that would be of great value.

Q. Concerning the testimony that CDR Waddle--is it--you were questioned about the XO's results of interview, and to paraphrase what was said in the XO's results of interview, the CO told the OOD that he wants to be at periscope depth in 5 minutes, do you remember the testimony about that, sir?
A. Yes.

Q. It is appropriate training for an OOD and it is an appropriate order for an OOD, for the CO to give him a task and a time to accomplish it in, to develop that officer's ability to operate under pressure, isn't that true, sir?
A. Yes.

Q. Such orders to do a task, and given a time to do them in, help an OOD learn to be efficient and to do things right and efficiently, correct, sir?
A. Correct.

Q. And with the CO on the Bridge, that would have afforded the Commanding Officer the opportunity to watch the Officer of the Deck perform that evolution and to evaluate his performance, correct, sir?
A. With the CO in the Conn, in the Control Room with the OOD, yes.

Q. And in fact, CDR Waddle was in the Conn, in the Control Room during the entire evolution from the elevation of the vessel to 150 feet through the emergency blow, is that correct, sir?
A. That's right. I think he left Sonar and stayed in Control thereafter when they were in the baffle clearing portion and on up.

Q. Would you agree, sir, that the U.S. Navy Regulations, provide that the Commanding Officer, in this case CDR Waddle, is ultimately responsible for the safe operation of his vessel?
A. Yes.

Q. To your knowledge, did CDR Waddle--has CDR Waddle at anytime tried to shirk his responsibility, for his conduct, during the cruise of 9 February 2001?
A. No, I think CDR Waddle is a very stand-up individual who would not shirk his duty, and can I go back to this point with the Officer of the Deck, because I think it's appropriate for the court. I as a Commanding Officer had a range of Officers of the Deck in my Wardroom in proficiency and experience level. And, I had some who I did need, as CDR Waddle felt he needed to do with Mr. Coen, give time constraints to, because I needed to train them to be more efficient and be able to combine both proficiency and alacrity, which is the ultimate goal is to have the best of both traits. And I understand that CDR Waddle may have needed to do that more with some officers than others, and I have a feeling from my interviews that he felt he needed to do that in this stage of LTJG Coen's career, and so I understand that, and that is a factor here.

Q. In fact, sir, wouldn't you agree, that CDR Waddle's performance, with respect to his OOD, on 9 February 2001, are indications that he was concerned about the development of LTJG Coen and his appropriate development as an Officer of the Deck?
A. I don't know how I can put that in a longer term perspective, I think at the--in the execution of routine operations by Mr. Coen, CDR Waddle felt that this stage in Mr. Coen's career, he needed close supervision. Perhaps more than the normal Officer of the Deck, because of his characteristic of being deliberate and his newness to the qualified ranks of OOD's onboard. But, I don't know if I can truly characterize, projecting ahead for his career how much of that was concern as opposed to just constructive engagement in the near term. In other words, I'm not saying that he was counting on the ultimate potential of Mr. Coen, one way or the other. I don't have data on that.

Q. But CDR Waddle was--had left the OOD in the position of OOD and had not assumed the Conn, correct, sir?
A. Yes.

Q. And that is indicative of a training evolution rather than taking the OOD out of the loop, wouldn't you agree, sir? Helping the OOD to be trained?
A. It certainly could be seen in that light. I'm sure that when this Officer of the Deck had the watch, CDR Waddle used every opportunity he could to constructively train the Officer of the Deck.

Q. That would be the kind of conduct you would expect of a competent Commanding Officer?
A. Absolutely.

Q. I believe it was RADM Stone, sir, and I'm going to start with his questions, now. He initially discussed CAPT Brandhuber and his presence onboard USS GREENEVILLE, on 9 February. As we just discussed, CDR Waddle was the Captain of the vessel--was responsible ultimately for the safe operation of the vessel.
A. Yes.

Q. And that's pursuant to U.S. Navy Regulations, correct, sir?
A. Correct.

Q. Although it's still to be determined the specific role that CAPT Brandhuber may have been in, whether pursuant to U.S. Navy Regulations or otherwise, by assumption of command in an acting capacity, you would agree that CAPT Brandhuber, if he saw an unsafe situation, would have a duty to bring that to the attention of the Captain. Would he not, sir?
A. I do.

Q. To your knowledge, CAPT Brandhuber did not take issue with anything that CDR Waddle did during that performance of the DV cruise of 9 February 2001, isn't that accurate?
A. Do you mean until they moored again or do you mean at the point of collision?

Q. Up to the point of the collision, sir, since we're at that point.
A. That's accurate, and I'm not implying that he did take exception afterwards, but it would be--I would have to put the question in new light after the collision, because he did have a more active role in helping the ship communicate, the SAR and so forth.

Q. RADM Stone also asked you about the watchbill, sir. Obviously, the missing watchbill is a document that this court needs to have and I don't profess to be a ship driver, sir, but I'm going to do my best with this. A watchbill was prepared by someone not the Commanding Officer, correct, sir?
A. Correct.

Q. And the person who prepares the watchbill and those persons who review it, who are aware of the capabilities of the personnel, also are responsible for insuring that properly qualified personnel are put in the appropriate stations during watch, would you agree with that, sir?
A. The whole chain of command is responsible for making sure that the right qualified people are on watch.

Q. On a watchbill onboard a naval vessel, when an individual is unqualified and under instruction, how is that properly indicated on a watchbill?
A. Well, you have a range of administrative options that's not specified by higher authority, but it must be clear that they are not the fully qualified watch that they have some under-instruction role, and that a number of administrative means can be used to do that.

Q. And one of those administrative means and probably one of the most common is to put behind the person's name, U/I, would you agree, sir?
A. Certainly, that's common.

Q. And that indicates under instruction, correct, sir?
A. Correct.

Q. Unless the Commanding Officer actually knew of the person's individual qualifications--unless under instruction was indicated, the Commanding Officer reviewing the watchbill would have no way to know of the status of the individual who's assigned to that watch, correct?
A. No, that's not correct. The Captain would----

Q. Tell me why it's not correct.
A. These are small ships and the Captains tend to be very intimately familiar with the crew's rate of progress, individually, as well as collectively. CDR Waddle strikes me as a Captain who would have an above average knowledge of that because he was very engaged with his people, his crew, and my guess is he would rival the exec for personal knowledge of the

level of qualification of everybody onboard, and it would be despite his administrative processes.

Q. That would be the assumption you would make based on what you know of CDR Waddle and his competence to date?
A. In my experience to date.

Q. With respect to safety, efficiency, and backup, CDR Waddle's three principles, I asked you--you were questioned about it by RADM Stone, and there was a suggestion made that those were just words or rhetoric unless they're translated into action. You did not have an appropriate opportunity to determine whether or not those three words are simply rhetoric onboard USS GREENEVILLE or whether those things were translated into action on a daily basis by CDR Waddle and his crew, correct, sir?
A. I did not even know those were the words that describe the CO's philosophy until testimony started. So, clearly I did not focus on that, other than as it may indirectly relate to me looking at standards as I did address them in my investigation of 3 short days, and that is a fruitful area for the court to examine further.

Q. You responded to a number of questions by RADM Stone, sir, concerning a Commanding Officer's best judgment. Sir, would you--a Commanding Officer is required--and I'll ask you if you agree with this statement, sir. The Commanding Officer is required to exercise his good judgment, based on circumstances as he understands them, the facts as he understands them, at the time, when operating his vessel. Would you agree with that, sir?
A. I would agree with that.

Q. When talking about the accountability of Commanding Officers, sir, the Navy takes, I'm not sure it's pride, but the Navy is diligent in examining accidents that may happen at sea and otherwise. Would you agree with that, sir?
A. I would.

Q. For example, the USS VINCENNES shot down an Iranian airliner several years ago that resulted in loss of life for all personnel onboard that airliner. Do you have a recollection of that event?
A. I do.

Q. It was a very traumatic event for the Navy, wouldn't you agree, sir?
A. Yes, it was.

Q. CAPT Richard Rogers was the Commanding Officer of that vessel, correct, sir?
A. That's my recollection.

Q. CAPT Rogers, as the Commanding Officer, who ultimately was responsible for the firing of the missile was responsible as the Commanding Officer of that vessel, correct, sir?
A. Correct.

Q. More recently, a few weeks ago, the USS COLE had a terrorist attack when 17 Sailors were killed onboard that ship, are you aware of that, sir?
A. Yes.

Q. CDR Kurt Lipold, was the Commanding Officer of that ship, was responsible for that ship, as the Commanding Officer pursuant to U.S. Navy Regulations, correct, sir?
A. Correct.

Q. Sir, you have uncovered no evidence during your investigation that the Commanding Officer of the USS GREENEVILLE, CDR Waddle, was either intentionally ignorant of the true circumstances on the 9th of February or acted in a way so as to make himself ignorant of those circumstances, are you?
A. No, I'm not aware of any circumstances that would lead to that conclusion.

Q. You have no evidence--and you uncovered none during investigation that the Commanding Officer of the USS GREENEVILLE, CDR Waddle, intended to operate the USS GREENEVILLE unsafely, would you agree with that?
A. Of course.

Q. In fact, all of the evidence that you uncovered indicated that CDR Waddle intended to operate his vessel safely and to avoid a collision, wouldn't you agree with that, sir?
A. Of course.

Q. Would you also agree with me, sir, that evaluating the Commanding Officer's best judgment is not simply a function of retrospective review?
A. It's not just that.

Q. Would you agree that in evaluating a Commander's judgment, you must place yourself in the position the Commanding Officer was in, with the information that was available to him and known by him, to judge his decisions at the time?
A. You need to do that to have the fullest appreciation of why he did what he did.

Q. In evaluating a Commanding Officer's judgment, you must review the circumstances, the entire circumstances surrounding an event, correct, sir?
A. Correct.

Q. The Commanding Officer's understanding of the situation?
A. Correct.

Q. The Commanding Officer's experience, knowledge and training?
A. All those things.

Q. When you responded to RADM Stone's questions about accountability, sir, would you agree with me that accountability and responsibility as a Commanding Officer does not necessarily equate to criminal liability for an accident?
A. I would agree with that. It does not necessarily equate.

Q. In your investigation, sir, did you find any evidence that CDR Waddle acted criminally negligent in the operation of his vessel?
A. In my opinion, he was not criminally negligent.

Q. Sir, when evaluating a contact, would you agree with me that--and I'm talking about Exhibit 7, the Commanding Officer is not required to ignore all the data on that target, that the ship possesses?
A. Did you want to use the word ignore there?

Q. I'm sorry, sir, let me re-ask the question again. Sir, with respect to contact Sierra 13, would you agree with me that CDR Waddle was entitled to rely on the data that he was aware of, for contact Sierra 13 in the hour that had been generated--in the hour prior to the movement to prep it to 150 feet?
A. Let me see if I understand the question. I think it's an important one. I think you're asking me, is he required to personally observe and learn of the individual component of data that are going on all around him on the ship, in order to independently construct the same opinion or conclusion that it's safe to proceed to the next step that perhaps his Officer of the Deck and watchstanders have reached.

To the degree his time and resources allow him to do so, the prudent CO would do as much of that independently as he could, but it should be recognized that a lot of that he doesn't have the time to do, and so my guess is that CDR Waddle, like any good Skipper would do as much of this on his own as a backup and an independent check as he could, but that obviously, he would not be able to do it all, that's why we the subordinate watchstanders. They're disbursed in locations and with sensors and in qualifications and taskings to feed that centrally to the Officer of the Deck and the Captain. So, he certainly is not required to independently go do all of those subordinate watchstander functions, ultimately the judgment of how much he does and what it takes for him to be personally satisfied that his advice he's getting is sound is up to him.

Q. I'm not sure that that was the answer to the question that I asked.
A. I'm sorry if I missed the question.

Q. That's not a problem, sir, I think what you said is probably the answer to one of my next questions, but, with respect to target Sierra 13 or contacts here at 13 [I'm discussing Exhibit 7], there is information that would be of benefit to the Commanding Officer in this data that was compiled between 1230 and 1320. Would you agree with that, sir?
A. Yes, that's of value to him.

Q. And the Commanding Officer, in making his decisions, is not required to disregard the data that had been compiled for target Sierra-13 between 1230 and 13--looks like 25, sir, when they made the turn?
A. Not only not required, it would be imprudent for him to disregard it.

Q. Sir, do you have Exhibit 34 in front of you?
A. What is Exhibit 34? No, I do not.

Q. It's the USS GREENEVILLE fire control solutions document provided by LCDR Filbert.
A. Not right now. I'm sure I can get it here.

[Bailiff handed Exhibit 34 to witness.]

Q. I'll come back to that, sir. I'm missing one document. Sir, the Commanding Officer's Standing Orders--at the end of your testimony today, you indicated that, at the end of your redirect testimony today, you indicated that the Commanding Officer is permitted to deviate from his Standing Orders, because he wrote the Standing Orders.
A. Certainly, he is.

Q. RADM Sullivan discussed with you Section 0610 of the Standing Orders. Do you have those in front of you, sir?
A. No.

Q. Bailiff help me out would you, please? It's Exhibit 37. I'm sorry, Exhibit 1. Sir, do you have Exhibit 1, sir? It's enclosure (7) to your investigation.

[Bailiff handed Exhibit 1 to witness]

A. My enclosure (7) is here, but it's a summary of an interview with Seacrest, that's enclosure (7) to the initial report.

Q. Standing Order 0610?
A. Let me work on that here for a second [reviewing exhibit], I think I have it. Okay, I'm at 0610.

Q. RADM Sullivan asked you about paragraph 1 of Standing Order 0610, sir?
A. Yes.

Q. And the indication there is that to clear baffles, the Officer of the Deck is to stay on course at 150 feet until there's enough data on the AVSDU and the time bearing mode on the MK 81-2 display to determine actual bearing rate in the direction of relative motion, about 3 minutes. Correct, Sir?
A. Correct.

Q. It doesn't require a 3 minute wait. Do you agree with that, sir?
A. Yes.

Q. The MK 81-2 display is the display the Fire Control Technician's display, is that accurate, sir?
A. It's one of those----

Q. Do you have that chart, the Control Room chart? The MK 81-2 is one of the displays over here [pointing laser at exhibit], correct, sir?
A. It's this one in particular that the ship would be using for time/bearing display in general as their practice. The second from the forward most of the four consoles there [pointing laser at exhibit]

Q. With respect to the clearing baffles, sir, 0610.2 requires that the Officer of the Deck, quote, “ensure that sonar contacts on the right are drawing right and those on the left are drawing left, or that they are drawing astern whenever possible.” Sir, would you agree with me that this solution on Exhibit 7 is an indication of an opening solution?
A. Yes.

Q. And that would comply if the Commanding Officer and Officer of the Deck believed that that contact Sierra 13, was an opening contact, that that would comply with the Standing Order?
A. For that contact, yes, and further, I think that the information the CO had on contacts at this time, for all the contacts, would indicate he chose a course that met this condition, except there was perhaps one contact in the Northwest, which would have been in the baffles, and he may have previously determined that that was distant, but it was not being seen on sonar at that time. I don't know, it was either Sierra 12 or Sierra 14.

Q. Sierra 12 probably, sir.
A. Okay, so I think the CO felt he was complying with this general guidance in going at periscope depth on 120 as far as the course selection.

Q. Assuming for a moment, and the assumption that the Commanding Officer was aware of this solution for Sierra 13 on Exhibit 7, it was reasonable for him to come to periscope depth as we just discussed, correct, sir? And it complied with this Standing Order?
A. For what he knew, yes.

Q. Sir, you were asked some questions about Exhibit 36, which is the periscope employment excerpt from a doctrinal publication. Are you aware that NWP 3-55.42 is the recent version of that publication, which is dated October 1999?
A. I am now.

Q. The letter you were shown about NWP77 is dated May 1985, does that ring a bell, sir?
A. Yes, know that doesn't mean the letter is not applicable any longer, but yes, I am aware of it. It's not unusual to have revisions to the manual, but these letters are still germane in the front, the front piece of the book.

Q. Let me ask you, sir. We talked yesterday at some length about the initial search at periscope depth and you responded to questions from LTJG Coen's counsel about that. You would agree, sir, that the initial search at periscope depth was completed in compliance with either NWP3-13.10 or the Commanding Officer's Standing Orders, would you not?
A. Yes, I would agree.

Q. RADM Sullivan asked you questions about the continuous visual search and that document, quote, gives a recommended process. Is that fair, sir?
A. Yes.

Q. When a process is recommended, deviation from that recommended process is appropriate based on circumstances, wouldn't you agree, sir?
A. If the judgment of the CO is that deviation is appropriate then, yes.

Q. The deviation that we know of in this case is that CDR Waddle did not perform a detailed sector search in sectors, which did not have sonar contacts. Do you agree with that, sir?
A. Yes.

Q. CDR Waddle focused his visual search--his detailed visual search, in the area of probable contacts and threat to vessel. Would you agree with that, sir?
A. If you key on sonar alone, yes.

Q. At the time, CDR Waddle took the periscope there was also ongoing an ESM defensive search. Do you agree with that, sir?
A. Yes.

Q. RADM Sullivan also asked you about the portion of the first paragraph that indicates following the initial surface search several rapid low-power sweeps at maximum head prism elevation and several more sweeps at 35 to 40 degrees elevation should be made to protect the presence of aircraft. Would you agree with me that that process was not required under the circumstances?
A. Yes, I would. The air searches are not germane to what the Commander was doing at that moment.

Q. What the searches performed by the GREENEVILLE on 9 February 2001 were meant to do, was to identify potential hazards to the vessel, correct, sir? Surface hazards?
A. Yes, for the time frame until completing the emergency blow.

Q. An air search would be something that would be done with respect to a mission requirement, when stealth was required?
A. Correct.

Q. And the continuous visual search--the search that CDR Waddle performed while not continuous, was a visual search to clear the area in which he believed threats to the vessel--hazards to the vessel existed based on the information he had. Do you agree with that, sir?
A. Mostly. Here's where I would disagree, he's keying in on sonar contacts, again these are contacts that sonar will find because they put out enough noise in the water. There are other kinds of contacts out there, and if you don't do a complete visual search in high-power, you're not optimizing your chances to see all contacts as opposed to the contacts likely to be detected on sonar, which is a subset of contacts.

Q. And in this case, CDR Waddle did perform a low-power search 360 degrees, to the best of your knowledge, correct, sir?
A. Correct.

Q. And LTJG Coen performed three low-powered searches through 360 degrees, correct, sir?
A. Correct.

Q. And, you're not aware of any non-sonar contacts that were in the area at the time GREENEVILLE conducted the EMBT Blow, correct, sir?
A. With hindsight, I can say there were not. I would not have known that at the time, without looking.

Q. Among the factors that CDR Waddle may have, could have, and should have, factored into this calculus, was the known density of shipping in the area. Wouldn't you agree, sir?
A. Certainly.

Q. And as we discussed yesterday, this was a low density shipping area, correct?
A. Correct, low doesn't apply none, however.

Counsel for CDR Waddle, party (Mr. Gittins): Indeed, sir, indeed.

PRES: Mr. Gittins?

Counsel for CDR Waddle, party (Mr. Gittins): Yes, sir?

PRES: It's 1120, I know you're into a very important place that you want to make right now, I'm willing to go, you know, extend into our normal lunch time if you--I'm not sure where you are in terms of amount of time you want, so----

Counsel for CDR Waddle, party (Mr. Gittins): I probably have about another half hour, sir, so maybe this would an appropriate time to----

PRES: It's your call here. If you'd like, we could recess now and then we'll convene at the normal time, so you can proceed all down your coherent path--I think it is what you want to go down. I want to make sure you got the time to do that.

Counsel for CDR Waddle, party (Mr. Gittins): Thank you, sir, and I think this would be an appropriate time.

PRES: Okay.

Counsel for CDR Waddle, party (Mr. Gittins): And I appreciate the fact that you are giving me the opportunity to deliberate, sir.

PRES: Alright. This court is in recess until 1300.

The court recessed at 1121 hours, 8 March 2001.

The court opened at 1300 hours, 8 March 2001.

PRES: This court is now in order. Counsel for the Court.

CC: Let the record reflect that all members, parties, and counsel are again present. Recall RADM Griffiths to the stand.

[The bailiff did as directed.]

CC: Again, a reminder, this afternoon for everyone to speak slowly and into the microphones to allow our interpreters to the best job they can. Thank you.

CC: RADM Griffiths, if you would retake your seat in the witness box. Again, I'll remind you you're still under oath.

WIT: I understand.

[The witness resumed seat in witness box.]

CC: Mr. Gittins.

Charles H. Griffiths, Junior, Rear Admiral, U.S. Navy, was recalled as a witness for the court, was reminded of his oath, and examined as follows:

RECROSS-EXAMINATION

Questions by counsel for CDR Waddle, party (Mr. Gittins):

Q. I'm not exactly sure where I left off, but I believe I was talking about the command climate with you, sir. You would acknowledge, and I think you've suggested to this investigatory body, that they should review the command climate onboard the USS GREENEVILLE, correct, sir?
A. Correct.

Q. To that end, you would acknowledge if you had insufficient information to access critically and completely the command climate on USS GREENEVILLE, correct?
A. Correct.

Q. In that regard, you indicated that the ship made some mistakes and perhaps mistakes in judgment. Is that accurate, sir?
A. Yes.

Q. As a result of your investigation, sir, did you uncover any evidence that the CO, XO, or OOD were not giving their best, honest efforts to operate the ship safely?
A. No.

Q. With respect to the mistakes, and perhaps mistakes of judgment, I believe you testified earlier that none of the single measures that you've described to this board were egregious just short of where you would want them to be? Is that a fair characterization of what you said earlier, sir?
A. Yes.

Q. You would acknowledge that the Commanding Officer in using his judgment and evaluating the circumstances based on his training, may perform the procedures as he believes them required to be performed under the circumstances would you not, sir?
A. In a general sense?

Q. Yes, sir?
A. Yes.

Q. In terms of backup of the Commanding Officer, have you ever heard any submariner say that the most dangerous time in a CO's career is at the 2 year mark of his command?
A. Yes, I have.

Q. Will you tell the members about that, sir?
A. I overheard indirectly that ADM Fargo made this comment. I don't know to who, but I think at least to RADM Konetzni that that's the point in a, and I think he was overlooking his--ADM Fargo's career and people he has know, and probably also from his own perspective, and he was saying that that's the point in a CO's career where you've experienced most of the things you're going to experience in command at least once, and that therefore you've built up the confidence that experience brings and you're therefore probably at your most confident level and you're not yet in your final days of your command where you may become more cautious because you're saying, boy, I've had a great command tour here, now, I don't want anything to go wrong in the 11th hour to change that. So before you're in that final mode, but yet you're in that original mode, and I think that this is an opinion of ADM Fargo's that he's espoused. And I might add that I don't necessarily agree with that opinion.

Q . Yes, sir. Have you heard that same phrase, the 2 year point's a dangerous time in a Commander's career with respect to the way the crew may view the Commanding Officer, having served with him for 2 years. Have you heard anything along those lines?
A. No.

Q. You indicated during your testimony on redirect that as a CO, it's important to have the crew back you up.
A. Yes.

Q. To your knowledge, based on your investigation that you conducted, is there any reason that you're aware of that the Fire Control Technician of the Watch could not have informed CDR Waddle of a contact solution at 4,000 yards when he computed it.
A. I think he was able to do so and did not. I think that the FT of the Watch thought there were factors that made it more difficult than normal for him to do that. And in my opinion, he could have overcome those factors and made the report.

PRES: Mr. Gittins, do you mind if I ask a follow-on question?

Counsel for CDR Waddle, party (Mr. Gittins): Not at all, sir.

EXAMINATION BY THE COURT

Questions by the President:

Q. What do you think those factors would be, Admiral, that would make it more difficult for him to report?
A. Basically two things. One, the physical presence of so many additional people in Control, the visitors blocking view and physical excess as compared to normal. And secondly, the manner in which the Commanding Officer worked directly with Sonar to make the decisions he made in the target motion analysis phase to decide to come to periscope depth. It just gave the FT of the Watch, and the FT of the Watch's description to me an impression that the CO felt comfortable working directly with sonar without a lot of other inputs. And this was the impression that the FT of the Watch had of the way the CO and the Sonar watchstanders were working at that point. And I think, probably, it was more the former issue of the physical presence of the visitors in significance if you compare the two. Both were issues that he brought up.

Q. One more question, sir, if you don't mind. You mentioned time as an issue here. Would it be an issue of him then having confidence? This is not an issue of him having confidence that he really had a solution at 4,000 yards or not. When he saw the four, he should have reported whether or not he thought he had high or low confidence?
A. Yes, sir. He probably didn't have high confidence that four was correct. But it was an alarming change. And regardless of

his feelings about it, it was potentially a dangerous situation and he should have brought it up.

PRES: Counsel.

Counsel for CDR Waddle, party (Mr. Gittins):

Q. As we discussed earlier, sir, I believe you hold the view, and I think strongly so, that had the Fire Control Technician of the Watch announced the 4,000 yard contact and solution that this accident would not have occurred?
A. Yes, I do hold the view that that would have been one of the things that could have changed history, not the only thing, but certainly a very important thing.

Q. Clearly, at the time 1335, had the Commanding Officer been aware of that piece of information, you don't have any reason to believe that he would have surfaced the ship under those circumstances do you, sir?
A. That would have changed history. He would not of, without further effort to evaluate that data, conducted himself the way he did.

Q. Sir, with regard to the CEP, I want to talk about Exhibit 7 and Exhibit 4, both of which are on the wall behind the court reporter. There are two places in the last hour where the Fire Control Technician Officer of the Watch logically could not plot sonar contact data. Could you agree to that, sir?
A. Yes.

Q. And I'm talking about Sierra 13, the contact that's plotted on Exhibit 7.
A. I was focusing on that one contact also.

Q. Yes, sir. Just after 1240, perhaps 1242, 1243; the ship, USS GREENEVILLE, placed Sierra 13 in its baffles. Is that accurate?
A. Yes, that appears to be accurate.

Q. There would not be sonar contact data for Sierra 13 at that point, correct, sir?
A. Correct.

Q. And is this area, beginning about 1325, the ship began high-speed, high-angle maneuvers that also would have resulted in the sonar being, not inoperative, but not providing useful data to the Sonar Technicians, correct, sir?
A. Correct.

Q. There's a technical term for that, sir. Would you help me out with it?
A. It was out of ATF because of data scatter. Although it was receiving information, it was not a reliable set of information because the flow noise around the bow is so high.

Q. In the last hour, there was a failure to plot but at least for about 25 to 30 minutes in that last hour there's a reasonable explanation for not finding contact data. Would you agree to that, sir?
A. I'd say for a total of about 20 minutes in the aggregate of that hour, you're right for Sierra 13.

Q. Yes, sir----
A. Now, in this period, there may have been other contacts, but no contacts in this 5 minute period, approximately 5 minute period, would have been easy to plot.

Q. And the reason in the high angle, high-speed maneuvers, it would have been physically beyond, the fact that the sonar doesn't provide reliable data. It would have also been physically difficult for the Fire Control Officer of the Watch to get to the CE plot and manage to stay standing up to plot. Wouldn't you agree, sir?
A. In the high angles portion, yes. I don't know what angles the ship achieved in the high-speed turns. My studies indicated they didn't achieve large angles then because they were very proficient in avoiding the large angles, so more so in the angles period than the turn period it would have been physically hard to get to the plot, but conceivably in both periods.

Q. The information that this--plotted on the CEP, the paper plot, that would have been in the forward section of Control, is information that is also available from the Fire Control Technician's consoles on the starboard side of the vessel, correct, sir?
A. In the large part, yes. The annotations are not necessarily there, but the ship's displays are, yes. The equivalent type of information is there.

Q. The Commanding Officer would, in your opinion, would not have any difficulties understanding the displays of the Fire Control Technician Officer of the Watch, would he, sir? Those displays, they would be routinely reviewed by a Commanding Officer, or even an Officer of the Deck during their watch, correct, sir?
A. They could be and you would expect they would be. And especially with the AVSDU out of commission, I would expect that it would be referred to even more frequently than normal.

Q. Yes, sir. You, in response to, I believe it was, RADM Sullivan's question, sir, you talked about situational awareness on part of the Commanding Officer. Based on your investigation, you believe, and it's your opinion, that CDR Waddle believed he had situational awareness for the contacts that were displayed, or had been identified by sonar. Wouldn't you agree?
A. Yes, I think he did feel that he had a good situational awareness. I don't think he would have gone to periscope depth if didn't think that.

Q. Yes, sir. Sir, a Sonar Search Plan, that's a document that would be signed--prepared and signed before getting underway, correct?
A. It should be.

Q. You haven't seen a Sonar Search Plan for 9 February, correct?
A. Correct. I haven't necessarily spent time looking for it either.

Q. I understand, sir. So your testimony is that you don't know if one was done or not done, that is something that the investigation needs to look into?
A. Yes.

Q. Is there a retention--a records retention requirement----

CC: Can I just interrupt here, Mr. Gittins, just for a minute. Over the lunch break, Mr. President, we have found the Sonar Search Plan. It's classified SECRET right now, and as soon as we get a classification review done, we will be introducing that to the court.

PRES: Okay.

Counsel for CDR Waddle, party (Mr. Gittins): Thank you, that resolves that area.

Q. In response to RADM Sullivan's question, sir, you discussed the classification efforts by sonar of contact Sierra 13. Did you actually--did you or the people who conducted the invest--questioning on your behalf, actually ask those questions of the potential witnesses as to whether or not they attempted to classify Sierra 13?
A. I did not personally ask the question. I'm under the assumption that Commodore Byus did.

Q. Yes, sir. What would be required, sir, as a matter of course to classify a sonar target?
A. It may be as easy as just using the aural indications to the operator and having him do it with mental analysis from what he's hearing, or it may require, and generally would require, use of the analog system--the digital system I mean, in Sonar to aid--the installed legacy system, BSY-1, has modes called classification, which have various submodes that allow you to do analysis of the contacts, for example, and that's the most facile way to do it, but there are other ways as well by patching that signal to other equipments.

Q. Sir, is classification, in any way, related to signal-to-noise ratio for a contact?
A. Well yes it is, in that the more signal you have, the more signal you have to dissect and analyze. Weak contacts are difficult to analyze because they don't have enough signal to analyze.

Q. Sir. To log the classification, what degree of confidence would a Sonarman have to have to log the classification of a contact?
A. A fairly high degree. It's a judgmental thing but, I think the Sonarman would need a fairly high degree of confidence.

Q. Sir, are you aware that the Sonar Supervisor reported to CDR Waddle that Sierra 12 was a probable merchant, and that Sierra 13 was a probable small craft?
A. I--I don't remember if I recalled seeing those phrases or not, it's possible I was aware of it. It's not on my current consciousness, but I may have been.

Q. In your experience as a highly experienced submariner, sir, what--what would small craft mean to you if you were told that contact was a probable small craft?
A. In a nonmilitary contact such as we are talking about here, it would mean it's probably a pleasure boat or a very small

commercial fishing boat, and--or perhaps a--if there are high-speed passenger ferries, small passenger ferries, high-speed, it could be something like that. Those are the range of things I would be thinking about as opposed to a merchant or a warship or a 200 foot fishing trawler.

Q. So a 200 foot fishing trawler would not, in your mind, be a small craft?
A. No, it would be more--it would be called a trawler.

Q. Sir.
A. Or a merchant, one of those two, more than it would be called a small craft.

Q. Sir.
A. But there is a gray area here. A 200 foot fishing trawler may still be in that area for some Sonarman out there, but I would call it a trawler and not a small craft.

Q. The--a report of a probable small craft with a low signal-to-noise ratio on a bearing toward Oahu, sir, would that suggest to you as a far away contact as a submariner, if you didn't have a computed fire control solution?
A. No. No, I don't think I'd be comfortable in assuming that it was far away. In fact, in general, small craft are not detected that far away because they are small and their signal into the water is generally lower, therefore, than big machines and big ships, but it actually would be a cause for me in preparing to do an emergency blow, of some concern, that I would want to make sure that I gave it a good look because they're harder to see and they can be heard too if you come up in an emergency blow.

Q. Yes, sir----
A. You know it's at least 9 miles or closer because that's the distance to land in that bearing, so what you don't know is how far.

Q. Yes, sir. What we do know about Sierra 13 was that it was a low signal-to-noise ratio for a period prior to--was a negative signal noise ratio from the SLOGGER data.
Is that accurate, sir?
A. I'll take your word for it.

Q. Yes, sir. And it was on a bearing generally in the direction of Oahu, Honolulu, correct, sir?
A. Yes.

Q. And at least at time, according to Exhibit 7, sir, with respect to Exhibit 7, at approximately 1314, local time, there was a computed fire control solution that indicated it was opening. Is that correct, sir?
A. Yes.

Q. And opening would indicate going away or toward Oahu, correct, sir?
A. Correct.

Q. If a--if a Sonar Supervisor informed the Commanding Officer that he had a probable small craft, would the data that you see on Exhibit 7--the fact that the vessel would have been identified as going toward Oahu in a probable small craft, would that suggest to you, sir, a target of concern?
A. I can see where you're saying that that would indicate it as not a target of concern, let me counter that thought by--you know, when you start to think about this, I've had this target for over half an hour, but I guess at this point three quarters of an hour, and I'm only 9 miles or so from land as it is and that bearing, so if he's that far away and going away, he's on land, so at some point he has to be closer to me if he's really going away from me than 9 miles, and he's a small craft, I don't hear small craft as far as I hear merchants or trawlers, so I guess I would not call it of no concern. I maybe wouldn't call it high concern either, but it is definitely an issue for me that I would want to resolve if I were the OOD or CO before I emergency blew.

Q. Would you agree that 13--14----
A. It looks like an opening target from that information. Again, just thinking further about it, I might question that because if he's been opening that long at that bearing it doesn't jive with where I am from land myself.

Q. And we're talking about Exhibit 7 again, sir.
A. Right. Now we know small boats do meander and don't necessarily go like a merchant from point a to point b, so there are explanations for why a small craft would still be in that bearing and not be close. There is a potential range that's believable of outcomes on why that would be, but there is also the possibility that he is closer.

Q. Would you agree that information presented by Sierra 13 could cause confusion?
A. Yes. And confusion argues for further evaluation to me. Both by the court and for a ship at sea.

Q. Sir, we discussed--or you discussed in response to RADM Sullivan's questions the turn to the left, in its relationship to the Penguin Bank----
A. Yes.

Q. You interviewed ET1 Thomas did you not, sir?
A. I believe I did.

Q. Are you aware that ET1 Thomas, and I'm not sure if he stated it in your interview, sir, but stated that he is the person that advised the Commanding Officer that he should turn left because of Penguin Bank.
A. I don't think I was aware of that. I don't recall being aware of that.

Q. ET1 Thomas was the navigation supervisor onboard the GREENEVILLE at the time of the accident, correct sir?
A. I believe that is true, sir.

Q. It would be reasonable for a Commanding Officer who is provided that information by his navigation supervisor to, although he is required to think about it obviously and make a judgment decision, to follow that advise by an experienced navigation supervisor. Wouldn't you agree, sir?
A. I would certainly agree with that and furthermore, as I have testified before, I don't think 340 as the ultimate course and I don't think turning left or right to get to 340 is an issue that I'd take up with the Captain. I think that those were all, for what he knew at the time, reasonable decisions.

Q. Yes, sir. Sir, in responses to questions to RADM Sullivan you discussed the emergency deep procedure. In the normal course, an emergency deep could be ordered by anyone on the periscope at any time while the periscope is raised, correct, sir?
A. Yes.

Q. And an emergency deep is an immediate action drill, wouldn't you agree, sir?
A. Yes.

Q. It is a safety of ship drill?
A. Absolutely. It is a safety of ship command.

Q. In the normal course, if a emergency deep was required the crew would not have time to think about that. Would you agree, sir?
A. They would react immediately.

Q. They wouldn't get a warning that we're about to do a emergency deep, it would be emergency and they would react with an emergency action drill, correct, sir?
A. For the real case of a real emergency, that is what would happen with no prior warning. You may have no prior warning.

Q. There is no reason why it would be inappropriate to order an emergency deep in connection with a scheduled emergency main ballast tank blow, is there sir?
A. No, and I--in my discussions with the court earlier today I was trying to make the point that I think that was within the reasonable realm of what the CO could do in order to exercise the promptness of getting deep and blowing using emergency deep as a vehicle to do that. The court was questioning, was the full training value available if you don't brief that in advance and have monitors and so forth and no, the full training value may not have been there but it still may have been a very appropriate way to catalyst the rest of those sequence of evolutions in my mind.

Q. With the Captain on the Conn, he is the ultimate monitor of the performance of his ship. Is that not true, sir?
A. That is and I think that I did testify that the Captain could logically do this without any prior alertment even of the Exec or CAPT Brandhuber and still be doing something reasonable in my judgment.

Q. In response to questions by VADM Nathman, sir, you indicated that is was of concern to you that the digital depth gauge and the mechanical shallow water depth gauge were 6 feet off.
A. Yes. Although I'm still not guaranteeing that's--you know, that's--some people have told me that once the court was convened, I didn't determine that through my own investigation and so I'm not sure that is really the case. If it is the case, that would be something you will want to fix.

Q. The person who would apply those corrections in the normal course would be the Diving Officer of the Watch, would he not, sir?
A. You mean moment by moment?

Q. Yes, sir----
A. Yes. In fact, the Diving Officer of the Watch is probably not using the digital moment by moment. He is using the shallow depth gauge at periscope depth or you know when shallow and the fact that there is another indication that has this error is not something that is normally reported. It is a material issue for a indicator that you are using as a backup.

Q. The digital gauge is a backup?
A. Yes.

Q. And in the normal course, the GREENEVILLE----
A. May I just add though, it is an important backup because you don't know when the shallow is going to break and the backup is all you have. And so one of the characteristics of the Diving Officer is to keep track of both so that, should on suddenly fail, you don't inadvertently find yourself below test depth or on the surface before you realize it because you were focussed on a broken indication and didn't realize it was broken. Meanwhile the backup is telling you the real story even though it is 6 feet off.

Q. The tolerance for the shallow water mechanical depth gauge is plus or minus 9 inches, sir? Is that accurate, or do you know?
A. I don't know, sir. I know it's a fairly accurate device, so that rings true.

Q. When the AVSDU became a casualty item onboard, you noted as a result of your investigation that the Commanding Officer and the Executive Officer made more frequent visits to Sonar, correct, sir?
A. Correct.

Q. And that was an appropriate means by which to compensate for the casualty, correct, sir?
A. Absolutely.

Q. The compensation may also have been informed, would you not agree, sir, by the fact that GREENEVILLE was operating in an area of known low shipping?
A. The compensation for the failed AVSDU?

Q. Yes, sir.
A. Their actions is a result because----

Q. Yes, sir, the manner in which they compensated may have been informed by the fact that they were operating in an area where they expected little in the way of other shipping?
A. I'd be careful there counselor. The safety of a ship is a universal requirement and it applies uniformally across low and high and medium shipping areas and clearly should have applied 9 miles south of Oahu in hindsight. I'd be careful to make that assumption. I think the ship would probably want be conservative in a way that it maintains safety of ship standards.

Q. Would you agree, sir, that posting the Executive Officer in the Sonar Room would be one way to assure that proper compensation was being made at the time the ship was coming to periscope depth.
A. Absolutely, that was very appropriate. That's a strenuous measure.

Q. It's less important to have that compensation when the ship is operating at deep depths? Would you agree, sir?
A. Particularly when not in the proximity of a potential--of other submarines and the ship had every reason to believe it wasn't, so I would certainly agree here.

Q. So, when the ship is at deep depths, 400 feet, 600 feet whatever, there is less of a requirement to compensate by having frequent visits to Sonar, correct, sir?
A. That is correct except remember, we're at some point in this underway voyage starting to pay attention to building a history of information to make a judgment to do an emergency blow. And so at the point and time where that history starts to really count from then on whether you're deep or not you want to really be gathering that information diligently.

Q. And beginning at least after lunch you have evidence to suggest that the Captain and the Executive Officer were making those efforts?
A. Yes, by their presence in Sonar they were.

Q. With respect to the sonar--with the performance of Sonar on 9 February, sir, did you uncover any evidence that Sonar was not making proper and timely reports to the Control Room, Officer of the Deck, and the rest of the Control Party--Ship's Control Party?
A. Not directly, no. Some indirect indicators were, but not running the work tape and failure to aggressively classify those Sierra numbers more fully, but no direct knowledge. No direct evidence. I have a sense that the supervisor was a diligent supervisor and providing the appropriate types of reports.

Q. Sir, this was a distinguished visitor evolution, correct?
A. Correct.

Q. And you would agree that a distinguished visitor evolution--the purpose is to make the Navy look good? Would you agree with that, sir?
A. But not cosmetically. I mean to make the Navy look good because that's the way the Navy is.

Q. Absolutely, sir.
A. Amen.

Q. To show the competence of this vessel?
A. Yes.

Q. The competence of the crew?
A. Yes.

Q. And to potentially have those persons with influence say, go back to their communities and say good things about the Navy and possibly even help with recruiting people to join the Navy, correct, sir?
A. And budget support and all the broader issues the Navy faces in the future and—yes, that's correct.

Q. And so, as a part of embarking these--the distinguished visitors, the Commanding Officer wants to give them as much of a tour, as much of an experience onboard the vessel as he possibly can. Would you agree with that, sir?
A. I sure would.

Q. Sir, do submarines in the normal course of operating passive sonars pick up whale sounds?
A. Yes.

Q. And are they sometimes recorded?
A. Yes. Really routinely you should be recording everything by that work tape.

Q. Yes, sir. And did you know, sir, that the work tape was being used to--for the visitors to hear the sounds of whales at the time--during the distinguished visitor embarkation?
A. No, I did not know that.

Q. While using the tape to play would not permit it to record, correct, sir?
A. Had I known that, I would make comments that you may not want to hear next.

Q. Please, sir?
A. I think that that would have been something appropriate to do when surfaced and not when you are relying on the passive sonar system in submerged condition. I think there's a better time than when they chose to do that--to make that choice of use of that equipment, so that you continue to use it for its intended purpose when submerged.

Q. Which is to record?
A. Yes, however, that is an explanation I was not aware of.

Q. Yes, sir. And again, you said there would be--there may be a better time?
A. Yes.

Q. And that would be one of those issues where a Commander would exercise his judgment based on his experience. Would you agree, sir?
A. Yes.

Q. I believe you testified earlier that the Commanding Officer was accepting additional risk, basically accepting of risk during the course of this--the last hour of this evolution?
A. Could you remind me of the context I said that?

Q. The context was operating with a casualty AVSDU----
A. That occurred at increased risk, yes.

Q. And the failure to either note or maintain the CEP plot--paper plot, that added to the risk?
A. Yes.

Q. The evidence you obtained during the course of your investigation did not suggest that the Commanding Officer perceived a risk, did it? I can rephrase it if you would like, sir.
A. I think it should be rephrased.

Q. Yes, sir----
A. I mean we're not talking about any single moment in time, are we?

Q. Yes, sir, but within a short period of time prior to the collision, you uncovered no evidence that the Commanding Officer perceived that there was an imminent risk to his vessel did you, sir?
A. In a risk of collision for example?

Q. Yes, sir.
A. No, I don't think he knew that a collision was imminent until it was--it had already happened. I don't think anybody onboard knew that until it was too late.

Q. And to understand----
A. But, I think you--the issue the Captain is--that's probably not the right way to phrase what he's thinking. He's thinking I need to ensure safety and overcome any risk that gets in the way of that, and so he takes actions to operate his ship safely, including any new obstacles that come in his path. He has to overcome them like material problems or a higher contact density and so forth. But the fact that this ship was operating in local waters; and its only mission was public relations related; and it was not in a heavily trafficked area, all of those things are factors in this risk management issue that the CO would consider. But I don't think he'd ever zero the risk and say it's a lightly trafficked area, so contact avoidance is no longer a concern.

Q. And I would agree with you, sir, completely. With respect to minimizing the risk, sir, let me ask you if these things--the following are indications that Commanding Officer was attempting in his mind to minimize risk to his vessel. When the AVSDU was identified as out of commission he and his XO made efforts to go to Sonar and inspect the situation themselves?
A. Yes.

Q. That would be an indication of concern for--to compensate for risk?
A. I agree.

Q. When going to periscope depth stationing the Executive Officer in the Sonar Room that would be an indication of attempting to minimize the risk to the vessel?
A. I agree.

Q. When arriving at periscope depth and the OOD had completed his initial visual search by the Commanding Officer taking the periscope and performing the focused search on the area of interest himself. That would indicate a concern for safety of ship?
A. Yes.

Q. The Commanding Officer ordering an emergency deep and then upon reaching the appropriate depth to conduct the EMBT blow--immediately performing the EMBT blow, to minimize the time for contact picture to change?
A. Yes, I agree.

Q. So, all of those things indicate a Commanding Officer who is cognizant of the risk and trying to reduce it. Wouldn't you agree, sir.
A. I would.

Q. And all of those things would be reasonable under the circumstances. Wouldn't you agree, sir?
A. I would agree those are all reasonable steps to take and as I mentioned earlier. In most, if not all cases, I think the measures were taken, it was a question to what degree they were taken. And so I would just draw that one distinction, but otherwise, I absolutely agree.

Q. You would agree that--then that it's not a measure of what the Captain did, it was, in part, how far he may have gone to accomplishing those goals or two, how far they were executed by members of the crew?
A. In what time frame that happened and yes, I would agree.

Q. The very end of VADM Nathman's question, sir, he asked you to agree with the statement that best judgment based on poor or inaccurate data does not make good judgment. Correct, sir? Remember that?
A. Yes, I do.

Q. You would agree with me that before you can--that presupposes that you know that your data is bad. Would you agree with that, sir?
Good judgment, best judgment based on poor or inaccurate data does not make good judgment.
A. Well, I'm a little confused about the jumbling of all of these words together. I think what VADM Nathman was trying to say is, the result is also a measurement that you have to keep in mind. If you deviate and you end up with a bad result, then you're in a harsh light of accountability on why you deviated to begin with. And I think that's one of the things VADM Nathman, at least what I was thinking when he was talking, but I'm willing to try again on your question.

Q. Well, before you can--well you would agree that, in this case, there's no indication that the Commanding Officer was aware that he had wrong data before he surfaced the ship from the EMBT blow?
A. With one exception. He was very aware of the time line things were happening and he's very aware of the time lines, where given no urgency he would like things to happen. And so, he could be making a mental comparison of those timelines as things were occurring and he was receiving reports. Because again, the shorter things are allowed to happen and the more difficult it is for everybody to do well. And so with the exception that he was driving the time line, I would absolutely agree he did not know some of this data was there that would have warned him there was a potential for collision.

Q. Yes, sir. Even though the Commanding Officer may have been driving the time line, had Fire Technician--Control Technician of the Watch, provided timely reports, this accident would not, could not, occur. Would you agree, sir?
A. I will agree that that was one thing that could have changed history, one thing among others.

Q. Would you----
A. And that would have--excuse me.

Q. Yes, sir. Would you also agree that information was available to the Fire Control Technician Officer of the Watch?
A. Yes. I mean he had that information and he did not tell the OOD, the XO or the CO. And that was a very important omission.

Q. In the law, sir, there's a doctrine called the "Last Clear Chance." That probably was the last clear chance to avoid this unfortunate accident. Wouldn't you agree, sir?
A. Not really. I'm sorry to say, I don't agree because that was coincident with just prior to, or achieving periscope depth and the visual search techniques chosen by the Captain for periscope depth was what I considered the last clear chance.

Q. And specifically, how would----
A. Now that visual search may have been further educated by that input from that Fire Control Technician, but even if the Fire Control Technician had said nothing, as he apparently did, the Captain was still in complete control of how that visual search was conducted including, the depth selected, the length of time, the correlation of sonar contacts on the exact bearing, and so forth. So in my mind, the last clear chance in the way you just described it was when they did the emergency deep. That terminated the last clear chance.

Counsel for CDR Waddle, party (Mr. Gittins): That's all I have, sir. Thank you.

PRES: Counsel for LCDR Pfeifer?

Counsel for LCDR Pfeifer, party (LCDR Stone): Again, sir, I have just a few follow-ups. Bailiff, could you please put up Exhibit 5, please?

[The bailiff did as directed.]

Counsel for LCDR Pfeifer, party (LCDR Stone): Sir, while they're reading the document, it is my intention here on this part of re-cross to try and not ask you to speculate on any other things with regards to your Preliminary Inquiry, but I would like you to go through those areas where you think the board needs to focus because of areas that you, yourself, just didn't have the opportunity to get to, and that's kind of where I'm going to try and walk you through here. Make sure that as far as Executive Officer's concerned, that we set the parameters at least to the best that we can, using your Preliminary Inquiry, in terms of the issues that we think they need to do, okay? That's kind of--I'm kind of sign posted here on where we're looking to go. Okay, sir?

WIT: Okay.

Questions by LCDR Pfeifer, party (LCDR Stone):

Q. What we have here, sir, is Enclosure 5, and there might have been some confusion yesterday--would you agree with me that this exhibit [pointing laser at exhibit] maybe a little confusing in that it puts the Executive Officer in here as a watchstander where he may more appropriately need to be put here [pointing laser at exhibit] that there be a separate diagram that talks about shipboard operations, or in terms of the way the ship in of itself is run. Would you agree with me on that?
A. Yes.

Q. That----
A. That could create confusion and it kind of gives the false impression that the XO is a watchstander and he is not.

PRES: Counsel, would it make you feel any better if that's exactly what I feel, he's not a watchstander, he's watchful?

Counsel for LCDR Pfeifer, party (LCDR Stone): Yes, sir, and that's basically the point. We won't belabor it anymore, but I would like the Government, if they could, CAPT MacDonald, sir, to reproduce this one with a separate thing that says--instead of saying key watchstanders, to--we could admit, that says Shipboard Operations or Chain of Command, or something along those lines?

CC: Counsel, if you'd like to do that, we'll be happy to have it appended as an exhibit.

PRES: Counsel, maybe I can make it easier for you, that's what I see that dotted line as. I see the written organization as a solid line, okay? There's a relationship under the dotted line that means some sort of supporting relationship, not a key watchstander, so I don't take that document--I don't think the members, I'll speak to the members here, I don't think they take it either as being part of the watch team, so is it going to be useful to reproduce it? We'll be happy----

Counsel for LCDR Pfeifer, party (LCDR Stone): If everybody's--that's fine, sir.

PRES: Okay, but I think it was your point and I certainly agree with you.

Counsel for LCDR Pfeifer, party (LCDR Stone): Yes, sir.

MBR (RADM SULLIVAN): May I ask one question?

EXAMINATION BY THE COURT

Questions by a court member (RADM Sullivan):

Q. I'm a little bit confused because I thought we were just talking that the XO was in the Sonar Room, was not necessarily on the watchbill, but involved in ship's operations directly?
A. Can I ask the court if we could put up the diagram of the Control Room? I think I can answer your question better, sir.

PRES: We've got to get this back to the counsel.

Counsel for LCDR Pfeifer, party: Sir, any questions are more than welcome.

WIT: RADM Sullivan, my understanding of the events, the XO did report into Sonar. I think it actually was of his own volition as opposed to being directed or asked by the CO to do this. There may have been conversations between the CO and XO that asked the XO to go put time into Sonar, but at any rate he did, and so he was probably where I'm putting the laser pointer, in this region here and I consider that an optimal position to really do both, be in Sonar and be in Control because with one step your from one place to the other, and it gives them even a broader perspective and it allows them to cover more ground. So I kind of give him credit for being where that sticker tape is, in and out of Sonar with one step to where he can watch things in Control. That's the way I kind of viewed his whole role. And it may not be accurate and perhaps testimony can further define that, but that's my assumption.

MBR (RADM SULLIVAN): Okay, thank you.

Counsel for LCDR Pfeifer, party (LCDR Stone): Actually, sir, that was going to be my next point.

Questions by LCDR Pfeifer, party (LCDR Stone):

Q. Isn't there conflicting evidence within your Preliminary Inquiry as to how the Executive Officer got into Sonar. Specifically, enclosure (2) where CAPT Waddle--CDR Waddle said he ordered the Executive Officer into Sonar, and enclosure (3) where the Executive Officer says he entered Sonar on his volition. Is that your recollection?
A. Yes, they're are kind of—they're not necessarily in conflict, they're just different perspectives perhaps. The CO may have wanted it to happen--directed it to happen, asked that it happen, and that would be his perspective, and the XO, "Hey, I'm a guy who's trying to do--be in the right place at the right time, this is an important place now," so even independent of whether the CO asked him--so I'm not sure whether the CO and the XO agreed to this plan or it was just the XO, you know, laterally and the CO observing it. I really give the team the due credit within that whole boundary for doing the right thing.

Q. I guess then, sir, my only other question is then, would you agree, in terms of one of the parameters, that the board may consider necessary, is to look at this issue with regards to the position of the Executive Officer, how he got there with regards to the one issue that you focused on with the Executive Officer, as to the idea of forceful backup?
A. When you say one issue----

Q. Well----
A. What do you mean?

Q. Your findings of fact said, in a broad term, the idea that the Executive Officer needs to be focused on that forceful backup of the CO. Now it's not----
A. Yes.

Q. Not--I'm not eluding to the fact that this is the only place that he has that responsibility, but that this might be an issue where the board might be able to look to as to see whether or not forceful backup occurred.
A. I agree with you that's--that could be helpful.

Q. And that, I mean, really the only way that we're going to be able to figure this out is to have testimony. I mean, who saw what at what point and how that happened, so that's just an issue that the board needs to consider.
A. I agree.

Q. Okay. I believe you agreed, sir, that----
A. Can I just comment further?

Q. Sure, absolutely.
A. I--this may be an important distinction to you, your client and your team, to me, my perspective as an operator is, that the CO and the XO they've been working together for awhile, they're a team. The XO starts to do things because he knows that's what the CO wants, whether there's verbal direction or not. And from the CO's perspective, the XO's doing what he's told him to do when he goes and does those things. From the XO's perspective, he's matriculated into where he just understands what the CO wants and goes and does it because it's forceful backup and he knows the CO wants it, and whether there's that verbalization of going to do this or it's just the way that they work together, to me it is immaterial, it's getting done and done right, and the distinction in this case may be more important for you.

Q. You then, sir, do recognize though that this is one area that--I mean whether the board chooses to go down that road or not, it might be something that they might want to look at?
A. Yes.

Q. Thank you, sir. You also mentioned in response, or actually I think you agreed with RADM Sullivan's statements with regard to training being an issue that probably needs to be looked at, the training of the crew?
A. Training and qualifications?

Q. Training and qualifications?
A. Yes.

Q. And, I mean, that training and qualifications goes beyond that of just this--the issue with regards to the under instruction Sonarman?
A. Oh, absolutely.

Q. In fact, it would be the entire training program onboard the GREENEVILLE that probably ought to be looked at in terms of finding a true bearing as to the professionalism of the crew?
A. Yes. I think that's well said.

Q. And you--wouldn't you also agree that looking at training that the--the other chart, chain of command here [pointing at exhibit], training is pretty much an Executive Officer function. Wouldn't you agree?
A. Yes.

Q. And so—well, I don't know if this is a question, I guess--the board should look at that. You agree completely?
A. Yes. It's a good way to judge how the XO's doing.

Q. I think we would welcome that, sir. Do you agree that the calibration of the Digital Depth Gauge the board should look at as well? How it's done, when it needs to be done, with regard to the specific finding of fact of the times at periscope depth since that seems to be the only data that we have in terms of how far they were out of the water?
A. Yes, that would be helpful.

Q. Command climate, things that we probably need to look at in terms of people with regards to the crew? Sir, I'm sorry, with the crew's attitudes towards both the Commanding Officer and the Executive Officer? Would that be helpful?
A. Yes.

Q. As well as those of the junior officers as well as department heads. We should not exclude the officers as well?
A. Absolutely, and the most important aspect of that to me is--is the--trying to get a measure of how likely it is for the crew to give constructive advice to the senior officers.

Q. And----
A. In a timely fashion.

Q. Would you agree with me, sir, that we need to look at the professionalism of the Executive Officer for all of this? I mean, that is a substantial issue for this board.
A. Well, yes.

Q. Then would you then agree with me that we need to look at his entire career, in terms of development as a Naval Officer?
A. Well, that--that's up to the court. I give the CO and the XO full credit for having arrived onboard for their tours fully qualified and very capable, but it's up to the court to pull the string further looking back if they want to.

Q. Okay. And the best people to judge--of course probably the best person to judge the quality of the Executive Officer may be the Commanding Officer since, as you said, there's that team?
A. Yes, absolutely.

Q. But aside from that, who else do you think, within the submarine community, would be good judges of an Executive Officer? Would that be the Commodore, Squadron Commander?
A. The Squadron Commander for the GREENEVILLE would be a very good judge.

Q. In Hawaii, would RADM Konetzni be a decent judge or not?
A. Yes, he would.

Q. Would a previous person from the department head, a previous CO or Executive Officer from the Department Head tour? I know we're going a little bit back, but----
A. His superiors from past tours?

Q. Yes, sir.
A. Yes, again, it's kind of background information at that point because the focus is how's he doing on this tour, but that's up to the court to determine how much they want to emphasize that.

Q. Thank you, sir.
A. I just will grant you up front, he's very, very good to ever have gotten to be XO of GREENEVILLE by our system, independent of who he is.

Q. Sir, how important is an Engineering "E" Award in the submarine community? Would that be an important judge of an award in the past?
A. That's a prestigious ship's unit award.

Q. Are you aware, sir, that you presented LCDR Pfeifer the Engineering "E" Award when you were the Squadron Commander of Sub Squadron TWO in 1994?
A. I'm pleased to know that. I actually wondered if we've had any past crossings, and I guess we were both confused at the time, because there had been a brief social experience that CDR Waddle and I had done, enjoyed in the past and so I wondered if that was also the case for LCDR Pfeifer, who I tried to interview next. And at the time we drew a blank, but he's been more diligent than I have at recovering history, and I'm pleased to know that we did.

Q. I think he has a picture of that moment, sir.
A. And again I will grant you that these are fine officers that we're talking about here.

Q. Sir, in your best judgment, what should this board do to look at and clear the name of this Executive Officer, if possible? What other things besides--we know the events, we know his history, I mean, you, sir, are an Admiral in the United States Navy.
A. Well I think----

Q. What other things have we missed so far?
A. I think we need testimony from LCDR Pfeifer, and that would be the most important thing that we could do at this point to further understand what happened, along with the other parties. And so I would hope that that could some how be--could somehow transpire. And I think, as I mentioned earlier to the President of the Court, the crew needs to have further testimony. The officers and men of the GREENEVILLE's testimony can be sought now much more deliberately and universally than I was able to do in 3 days. And obviously the view point of the crew that served with LCDR Pfeifer is very important and would be informative, and the staff of the immediate squadron that supports the ship. So, there are plenty of sources to provide indirect information, but the most direct information is--resides in your client.

Counsel for LCDR Pfeifer, party (LCDR Stone): Would there be—sorry, I think that answers my questions. I appreciate your time this afternoon. Thank you, sir.

PRES: Counsel, question for you. Do you intend to bring some of these things out yourself and your own witnesses about the XO's history when you say the court should be obliged to find this out? My question is, you introduced a lot of questions for us. One of my questions for you is, do you intend to take us down this path so we clearly understand the XO's history and any areas where we are not able to figure out ourselves?

Counsel for LCDR Pfeifer, party (LCDR Stone): Sir, we have not yet submitted a witness list. We do have one that will be forthcoming and we plan to mount a vigorous----

PRES: I assume that, but you intend to go down that path of building this history of the XO from a certain part of his career, the beginning of his career, etcetera. Is that right?

Counsel for LCDR Pfeifer, party (LCDR Stone): Yes, sir, and I wanted to get from the Admiral if he thought it would be relevant to make sure you did as well. And yes, sir, we will submit that list and we will go forth. Thank you, sir.

PRES: Fine, thank you. Counsel for Mr. Coen?

Counsel for LTJG Coen, party (LCDR Filbert): Yes, sir, thank you.

Questions by counsel for LTJG Coen, party (LCDR Filbert):

Q. RADM Griffiths, I just have truly, maybe one or two questions. During your investigation, were you able to determine if LTJG Coen had ever been an Officer of the Deck during an emergency blow?
A: I vaguely remember that he had not.

Q. He had not?
A. That's what I vaguely remember. I hope that's not wrong because I certainly am not sure.

Q. Do you have Exhibit 1 in front of you?
A. No.

Counsel for LTJG Coen, party (LCDR Filbert): Bailiff?

WIT: I can get it. I think I remember he was nervous because he had not done this before, but----

Q. Just to make sure, sir, if you could look at enclosure (4), page 3, the very last sentence on that page. Could you read that aloud please?
A. No experience with emergency blows.

Q. And that is LTJG Coen's? The summary of his interview?
A. Yes.

Counsel for LTJG Coen, party (LCDR Filbert): Thank you, that's all the questions I have. Thank you, sir.

PRES: Counsel for the Court, recommendations?

CC: Yes, sir, that we proceed ahead now and I'll begin the search and rescue questions for RADM Griffiths, which will complete his testimony once Counsel for the Parties have an opportunity to cross-examine him.

PRES: Okay. I think we're fine for time. Let's go ahead and proceed then.

REDIRECT EXAMINATION

Questions by Counsel for the Court:

Q. RADM Griffiths, as part of your Preliminary Inquiry, did you have an opportunity to evaluate GREENEVILLE's performance with respect to search and rescue efforts after the collision?
A: I did.

Q. Sir, would you describe for the court how GREENEVILLE did?
A. I will and as a prelude. I think GREENEVILLE did very, very well in the search and rescue effort. I'm proud of what they did. I think the judgment that they exercised and the actions that they took were all that we could ask of them, for the degree to which we've equipped our attack submarines to effect open ocean search and rescue. I'll elaborate. The most important thing she did was very promptly give an immediate, concise report of the event by voice circuit to SUBPAC Headquarters here at Pearl Harbor, which was immediately then transferred from SUBPAC Headquarters to the Coast Guard in Honolulu and initiated the effect of rescue of the survivors.

Q. Sir are there any time limits placed by Navy Regulations on reporting times for those first initial reports?
A. Yes, there are. This general report of a disaster or important event is called an Operational Report or OPREP. The report should be provided within 5 minutes by voice of the event occurring which is an extremely challenging standard, especially for a submarine. And she came close to meeting those requirements and reported it as soon I think as humanly possible for a submarine to do.

Q. Sir, did they follow those up with written report.
A. She, subsequently, as the requirements exist to follow-up--did follow-up with written messages further elaborating the operational report situation to Shore Headquarters at SUBPAC, and continued to do so throughout the night while she remained at sea and searching.

Q. Admiral, is that part of the OPREP reporting system.
A. Yes.

Q. And how did she do in terms of meeting the OPREP reporting requirements?
A. My recollection is that the first written report is the standard 20 minutes and I could be a little off on that--I think its 20 minute, and she came close to meeting that. She may have

been 25 minutes or something like that. I don't recall the exact times, but I was impressed that they were close to the standard and were effective in their result.

Q. When you say effective in their result. What do you mean by that, sir?
A. I mean that the Navy-Coast Guard Team performed well here. The Coast Guard responded rapidly and promptly and got the assets on the scene to safely effect the rescue of the survivors and all the survivors in the life rafts were rescued and provided good care in a timely fashion even though this was 10 miles South of Oahu and so I think that's--I'm very glad to know that happened. I think that's remarkable.

Q. Sir, could you describe the sequence of events that occurred immediately following the collision as GREENEVILLE prepared for her search and rescue effort?
A. I'll--this will be a narrative and I'll try to be accurate in my recollections. The first thing to point out is that when a ship emergency blows it is not fully surfaced. The ballast tanks are only partially de-watered with the amount of air that was used in 10 seconds, so she is in a half-surfaced state and conservatively the submarine force does not man the Bridge after that until its had time to bring a low pressure blower online and take 15 minutes to de-water the remainder of the residual water from the ballast tanks. But, I think one very significant measure of the urgency that the Captain and crew of GREENEVILLE felt to help effect the rescue was that they immediately manned the Bridge before they had a chance to "prepare to surface" and run that low pressure blower to de-water the rest of the ballast tanks.

Now, obviously the CO made the decision that the ship was riding high enough so they would not re-submerge before the remainder of the de-watering and therefore he could put people on the Bridge with some assurance that they would stay above the water, but I think its a measure of the urgency the CO felt that he immediately sent people to the Bridge and that's a point that I took great note of. In parallel, they took the actions to de-water fully, but that took 20 more minutes and he didn't wait for that. In parallel, and these are all in parallel actions, they took immediate action to move the guests away from the Control Room, the heart of the ship at this point and a busy place and moved the guests first to the Crew's mess and then subsequently down another level to the Torpedo Room, because they were also in parallel taking actions now to rig the crews mess area, which is the largest open volume in this confined

submarine and the tables are useful for this to be a first aid station for mass casualties. So, they were preparing the crews mess to receive these casualties should they be brought below decks and so they moved the guests further down to the torpedo room and the guests were of course cooperative and behaved very well.

Again these are all happening in parallel. People went to the Bridge, which I believe would include the Commanding Officer and the Engineer Officer who would subsequently relieve the officer Mr. Coen in the Control Room as Officer of the Deck and stay on the Bridge. They went up and visually surveyed the scene and there may have been one other person with them. And they started to make judgments on whether and in parallel they are now suiting up the ship's divers--the rescue swimmers on the ship on the submarine and their preparatory swimming gear and rigging a Jacob's ladder down the port side of the sail, which was visible in the news media pictures from a helicopter swinging against the port side of the sail, which is unfortunately the only ladder we have to lower down to the main deck when you don't open the hatches. The ship in parallel was rigging open the lower hatches--the hatch aft of the sail to the main deck is the forward escape hatch and is a double hatch, lower and upper hatch and there's a dry volume between. They opened the lower hatch and prepared to drain and open the upper hatch when directed.

CC: Admiral, if I could interrupt you here. I'd like to put up a diagram of the submarine, so that it would aid you in your testimony to the court. Can we have this diagram marked as the next court exhibit in order?

CR: This will be marked as Exhibit 37.

CC: LCDR Harrison would you please put that up on that tray?

[LCDR Harrison did as directed.]

Q. Admiral, if you would, sir, if we could rewind your testimony just a little bit as you begin describing the location of the hatches and what was occurring on GREENEVILLE as she prepared to render assistance?
A. Can I approach the drawing just to get a closer view for a second?

CC: Yes, sir.

WIT: I just want to make sure I don't mislead anybody, my eyes are getting old. I was just discussing an opening of a lower hatch and preparing to open the upper hatch to the main deck of the forward escape hatch. That arrangement is right here aft of the sail. Now I know you saw, for those of you who watched the news reels the ship rolling in the seas and water washing over that main deck.

One of the important decisions that the Captain made was that, is it safer to try to bring these rafts of people up against the hull and try to bring them down that hatch or is it safer to wait the 30 minutes or so for the Coast Guard boats at the scene to more safely bring the life rafts and people into their vessels. You can see from the washing of those waves that two bad things would happen if they opened that hatch. One would be that the waves would start flooding the submarine, interior volume, which in addition to the water can create fire hazards and things of that nature from the electrical equipment, but the second thing is that the mere act of the raft trying to come up against this rounded cigar hull rolling and wallowing in the seas could turn those rafts over and greatly endanger the people in those rafts. Despite your best efforts to bring those rafts along side, they could be flipped over bumping against that hull [pointing at Exhibit 37.] The Captain made the decision, which I think was very prudent to have a calculus in his own mind of not sending his swimmers over the side and not bringing those rafts along side with the hatch open to the main deck unless certain things happen that would require that added risk. And the certain things were if he saw that any of the victims were in the water instead of safely in a raft then they would immediately do that. And they did not see that.

By the time--of course the sinking happened fairly quickly and miraculously the people were able get in the rafts very quickly. So, by the time people were on the Bridge and these decisions were being made, there were no people in the water. Not in a raft that the ship could see and they searched very diligently for that through their periscopes and from the Bridge.

PRES: Admiral, not to interrupt your narrative.

Questions by the President:

Q. But, did the Captain, because he recognized this issue of the sea condition and the potential tipping of the raft. I'm not sure of all of the wave actions, but the wind actions, did the Captain provide a lee for the rafts as best as he could.
A. Yes, sir, he attempted to maneuver the ship to create a lee----

Q. Would you explain that?
A. I'm going to list a large number of actions happening in parallel. I'm still adding to that list. They're still all happening right away. There is an outboard motor on a column that is lowered and it's an electric motor a large one that is trainable a full 360 degrees and it pivots once its lowered. It's lowered from the keel down at the aft end of the ship. It's called the outboard and its intent is to allow high degrees of maneuverability of the ship on the surface when it is otherwise relatively not very maneuverable due to the single screw aft.

And the intent of the Captain here was to allow the ship to maneuver very close to the life rafts to render assistance without inadvertently bumping into and endangering the life rafts and again this is a 7,000 ton vessel and there is some seamanship skills necessary to maneuver in this fashion, but they were thinking ahead about this and they did try to assess the seas based on the statements I reviewed and make a judgment on whether they could create a wind and wave breaker lull. Act almost like a floating break water, so that in the immediate shadow of the ships hull they would have calmer waters and make calmer waters for the life rafts.

So, they made attempts to maneuver around the rafts in that fashion, but they found the seas were confused. And the confusion means that the seas were coming from a multiple number of directions and so there was no consistent course the ship could take. No consistent location it could pick that would provide that lull for those rafts, but it was an issue the ship tried to solve and found that the confused seas made that not realistic.

Nevertheless they maneuvered the ship to try to put the bow of the submarine very close to one of the rafts, which had drifted slightly farther from the others and had only one person in it. And their worry was at least in the other rafts there's more than one person so there's some safety in support--mutual

support, but the raft with the single person they were worried that that person may be more likely to need assistance. And, so that's the raft they chose to shepherd among all the others and there are about eight rafts in the water now.

Okay, in parallel with these actions they had started a double periscope search, which is a practice that submarines are skilled in to look for man overboard and they were using these periscopes to monitor the condition of the people in the rafts and to make sure that the Coast Guard was coming in addition to the communications that indicated the Coast Guard was coming and they were trying to look for additional people who may not be in the rafts at this point. And they never did see a person who was not in the raft, but that continued to be a key question for them, because of if they had seen that their swimmers would have immediately gone in and then helped the person back into a raft and stayed with the raft and come ashore via the Coast Guard. Because again bringing them back on the submarine would have been just too dangerous.

Let's see. Communications that were occurring at this time included specific coordination with the Coast Guard units that were coming to the scene to make sure that the USS GREENEVILLE provided the Coast Guard all the information they could and to help coordinate the searching, so that it was efficient and coordinated.

Q: Admiral, how quickly did the Coast Guard get notified by SUBPAC who again was notified by GREENEVILLE that the EHIME MARU was taking on water and sinking?
A. My recollection is we have a collision at 1343 and the Coast Guard was notified by 1401 so that's 18 minutes. That's about a minute after the SUBPAC headquarters was notified or maybe 5 minutes after, so there's maybe a 10 minute period until the first signal was out then 6 minutes after that the Coast Guard knows something like that, and the time frames are in the enclosures to the report that I provided.

I think it is significant to note that now the Ehime Maru was a modern fishing trawler equipped with modern rescue notification equipment. For example they had these very efficient life rafts that automatically pressure release up and helped save so many survivors. That was very impressive--additionally they had radio beacons in a high frequency range. Probably a UHF range that were released when the ship started to sink. Automatically released that were trained--were programmed to send distress calls to the Coast Guard on the distress frequencies and the

Coast Guard did receive these, but only after they received notification from the U.S. Navy. I think it was about 5 minutes afterwards so that these distress buoys told the Coast Guard what they had just learned 5 minutes or 6 minutes earlier from the communications relay from GREENEVILLE through SUBPAC. So, that's another measure I think of how prompt the communications notifications were, which of course the time and the swiftness of communications is a key in search and rescue. I'm running out of steam here.

Q. Alright, sir. Let me ask you a question. Who orchestrated the search and rescue efforts on GREENEVILLE?
A. The Captain was in charge of the GREENEVILLE still and was making the major decisions about how to operate the ship. He was given good assistance from CAPT Brandhuber who shifted from a more passive role onboard to an immediate advisor and assistant to the captain. Largely trying to help him in a communications role as a communications manager thereafter in the Radio Room and so forth while the XO and the CO focused on orchestrating the people onboard to be directly involved in the search and rescue--in the search. And so CAPT Brandhuber assumed the role of overseeing the communications which continued to stream out of the GREENEVILLE to shore while the captain and his crew, including the exec focused on the ship's movements and the assignment of duties onboard.

Q. Admiral, would you please tell the court--give your assessment of CDR Waddle's performance during the search and rescue phase?
A. Well I think it was remarkable. I mean they had just suffered a trauma--unimaginable trauma and you know I'm--I think it was a remarkably professional effort.

Q. Sir, how would you assess the Executive Officer's performance?
A. Similarly. They both had experienced this trauma, as had everybody onboard, and they set it aside--compartmented that off--and immediately did the right thing.

Q. Sir, how about the Officer of the Deck?
A. I don't have any criticism of anybody onboard at this point. I think they were focused, cohesive as a team and doing the right thing, and that includes Mr. Coen.

CC: Mr. President, we have a video that was taken by the Coast Guard as they approached the life rafts that gives an indication of the weather conditions and the sea state that existed on the 9th of February that we would like to show to the court.

PRES: Counsel for the Parties, like to see it?

Counsel for CDR Waddle, party (Mr. Gittins): Yes, sir.

Counsel for LCDR Pfeifer, party (LCDR Stone): Yes, sir.

Counsel for LTJG Coen, party (LCDR Filbert): Yes, sir.

PRES: Alright.

Counsel for CDR Waddle, party (Mr. Gittins): Sir, can we have a break?

PRES: Certainly. This court will--I'd like--let's finish this issue and then we'll recess. I think the intent is we'll come back, if there's no objection to hearing this, look at the video tape because it's a Coast Guard tape. We'll watch it. We want to see it anyway, but I want to make sure you knew what kind of tape we'd be looking at, and maybe RADM Griffiths can comment on the tape if you want to. Whatever you notice on the tape that goes along with your observations from statements.

CC: Mr. President, I think it's a--an appropriate time for a break right now.

PRES: Excuse me.

CC: I think it's an appropriate time, sir, for us to take a break. We can come back.

PRES: Absolutely.

CC: Yes, sir.

PRES: I understand. I understand. Let's go ahead and recess for 20 minutes.

The court recessed at 1430 hours, 8 March 2001.

The court opened at 1450 hours, 8 March 2001.

PRES: This court is now back in session. Counsel, please.

CC: Let the record reflect that all members, parties and counsel are again present. Bailiff, would you recall RADM Griffiths?

[The bailiff did as directed.]

CC: Admiral, would you retake your seat in the witness box, sir, and again I remind you you're still under oath.

WIT: I understand.

[The witness resumed seat in witness box.]

CC: Mr. President, at this time I would like the following video to be marked as next court exhibit in order.

PRES: Very well.

CR: This will be marked as Exhibit 38.

CC: And, sir, as a prelude to showing the video, this is a video taken by the U.S. Coast Guard on the afternoon of 9 February as they proceeded out to assist in the search and rescue effort of the EHIME MARU. LCDR Harrison.

[LCDR Harrison did as directed.]

PRES: Before you run it--everyone in this court understands this is not necessarily something we want to do or is easy for members of the court or the parties and I understand that. So, I think what we'll do is--we've already heard evidence about the sea conditions, we already understand the physics, I believe, of a submarine in terms of its hull shape and its amount of hull area that is out of the water and I think we are going to watch the video for--as a validation of that testimony. And we are going to watch it for a period of time that is sufficient to make sure we understand that and then I think we are not going to watch anymore, okay? Let's go ahead and play the tape.

Charles H. Griffiths, Junior, Rear Admiral, U.S. Navy, was recalled as a witness for the court, was reminded of his oath, and examined as follows:

DIRECT EXAMINATION

[The court viewed Exhibit 38.]

PRES: Okay, you can turn it off. As the President, I'll just mention what I notice of this as a fairly strong validation of the amount of water that is over the bow of the ship going aft of the sail--a significant amount and if you can see that much water and it is white and blue over the top and the back of the sail, then you know that's a significant amount of water that's going over the top of that ship, in the vicinity of the hatch area that RADM Griffiths described. Any comments on that?

[Negative response by all.]

PRES: Alright.

CC: Admiral, I have one final question of RADM Griffiths.

Questions by Counsel for the Court:

Q. Sir, how long did USS GREENEVILLE spend at that search and rescue station?
A. The whole night. She stayed until the next morning searching and then entered port at 1000 local.

CC: Mr. President, that's all the questions that I have.

PRES: Okay. RADM Sullivan--excuse me, RADM Stone, any questions?

MBR (RADM STONE): Just one, sir.

Questions by a court member (RADM Stone):

Q. RADM Griffiths, in reading through your Preliminary Investigation and also your testimony, it is very clear, in my mind at least, that the GREENEVILLE did a very professional job throughout the SAR effort. I'd like to ask a question. I think it's fair to say that--from what I've read and from what I've heard, that there was absolutely no difference in the approach that GREENEVILLE took to the SAR effort. And those actions that were executed were the same if they would have been if in fact those were GREENEVILLE sailors that were missing or in the water. Is that your evaluation as well?
A. Absolutely.

MBR (RADM STONE): That is all I have, thank you.

PRES: RADM Sullivan?

Questions by a court member (RADM Sullivan):

Q. Admiral, I just had one question. Will you please describe for us what types of rescue gear a submarine of this class has onboard?
A. Yes, sir. Unfortunately it's minimal. They have, I believe, two rafts onboard and they have individual life vests and escape devices for the crew members if they are stricken and underwater trying to get to the surface from a relatively shallow bottomed condition. They have life rings. They have first aid equipment. They have of course a fairly robust communication suite. They have the ladder that they put over the sail. They have individual tethers that they could attach to swimmers and I believe the ship probably has about four swimmers. That would be the allowance for a typical attack submarine so they could swim out in a calmer sea and bring somebody back--attach to them and then bring them up on deck if they could open the hatches, and not a lot more than that. They don't have boats, for example, they don't have an arrangement where they could bring somebody from the water straight to the sail top and bring them down through the Bridge where it is higher above the surface. That arrangement other than that ladder that was swinging doesn't exist and I think that is a deficiency in the submarine force today that we need to work on.

Questions by the President:

Q. Would that be particularly difficult if someone was injured, say a back injury or leg injury trying to get them up a sail or down in a ladder?
A. Absolutely, that would be a nightmare because the--even for a person who is healthy--an able bodied male individual adult would have a difficult time getting up that sail--up that ladder in seas swinging. It would be impossible--next to impossible for an injured person to make it. This is a challenge we need to think about in the submarine force, how do we come up with a way to solve this in the future?

I just envision if this had been 1,000 miles from land and say it was a GREENEVILLE crewmember who happened to go overboard for whatever reason or the GREENEVILLE stumbled upon a maritime disaster 1,000 miles from land where GREENEVILLE is the only relief available in seas like this and it may be 2 hours before darkness and the time it would take to respond from 1,000 miles away, I'm not sure how we would solve that problem today.

Questions by a court member (RADM Sullivan):

Q. Will you please describe for the board the medical capability onboard a submarine for this class.
A. Yes, sir. An attack submarine has a very highly qualified independent duty corpsman. This is an enlisted Sailor--probably on average an E-6 petty officer, could be an E-5 or a Chief Petty Officer. A very, very, intelligent and highly trained individual, but not a doctor, not capable routinely of performing, for example, operations at sea. He could do so in a crisis, but his main function is to stabilize routine injuries and if there is something severe that happens to get advice from shore and stabilize the individual until a medivac could be affected whereby whether an airplane or a helicopter or a boat could come and transfer--transfer the injured party to a more robust hospital facility.

Q. And my final question. Even that sea state that didn't look all that bad, obviously the waves were washing over the main deck, in your experience are individuals put on the main deck in the open ocean from a submarine of this class?
A. It would be rarely done because of the risk. It a--not only the risk of the individuals, but also the risk of flooding and fires and so forth down the hatch. And particularly the risk of trying to recover them should they go in the water. Even with life harnesses, if you're attached to the traveler along the

deck and to your life ring, if you're in the water, just the physical contact against the hull from the waves can render you--we've had people killed in that fashion, even though tethered. And I'm talking Sailors, not civilian victims, so it's very hazardous.

MBR (RADM SULLIVAN): Thank you.

Questions by the President:

Q. Admiral, maybe you can discuss for me a little bit to help me understand this too, but it deals with the Captains response on a couple of things I think he was balancing here and it would be good for me to understand this and for the court to understand this. The Captain was obviously, from what I've heard, he was balancing the wave conditions in particular against his capabilities that he had and then he was also balancing and I assume--I would like you to talk a little bit about this, about what he knew was on the way--as far as the Coast Guard. Well, before you get there--I think we've established, but you can--if you want to add anything to this--we've established the concerns about the waves and what they do particularly for these type of life vessels and your ability to get people onboard. Well, I'm understanding--I think I understand in terms of capabilities on the scale of one to ten--or zero to ten, it sounds to me like the ship under direction of the sea is somewhere between a nine or a ten in terms of using this capability. I want to make sure I understand that because it is going to come back to a larger question and then his balancing knowing what the Coast Guard or other support or SAR agencies would provide for--comments?
A. Yes, sir. The ship did all about it could do in my judgment--a nine or a ten is an appropriate grade. And especially in light of the fact that they knew early on that capable help was in route promptly, that would safely effect the removal of the victims from the life raft to larger vessels to bring back to port. He knew, the Captain knew, that help was minutes away. I think it actually took an hour after the accident for it to arrive on scene, although the helicopter was there, I think, in 30 minutes or so to help make the arrival of the boats more efficient and effective, and that is very good time. It proved to be time that was put to good use to effectively rescue everybody from the rafts. So, that was one part of the equation, the CO knew that help was immediately at hand and could count on it and it would be safe and effective. And on the other hand, he had all the risks of trying to do something with his own ship beyond help to monitor and vector.

And so, he was spring loaded to put his people in the water to save a life, but barring the need to do that, he was saving the lives of his own divers and not further endangering those in the rafts by trying to bring them along side. So, I think it was a pretty clear and appropriate decision he made. I would have made the same one--you know and I had the luxury of hind site to evaluate it, I would still make the same one he did.

Q. I'll go back to that same balance of decisions you have to make as Commanding Officer. You've talked about the real concern of having a--I'm not sure what these life rafts even look like, but they look like they have somewhat of a round hull or a little bit of a keel on them or something.
A. EHIME MARU's?

Q. Yes.
A. I believe they were flat bottom, but they had a tent roof to provide shelter to the inhabitant above the water line.

Q. But, they are not broad of beam at all, so their tendency to tip like you describe is a very real concern and logically to happen on that hull of the submarine and then you create an injury if that occurs and I think then the real concern is--and maybe you can comment, if you create an injury then the ability of the GREENEVILLE to provide assistance?
A. Injury or worse because once they are spilled into the water, if they don't have life jackets they may drown, they may be injured and drowned or they may be rescued. Those are the range of option, but the huge risk of the first two happening is there.

Q. Well, what appreciation did the Captain--would you cover that for me again--the Captain's appreciation of what the Coast Guard was sending. The Captain knew he had a helicopter on the way. He probably knew that within 15 minutes, 10 minutes--any idea on that time line? But he knew a helicopter would be out there very quickly that could recover individuals. And then he--any idea about when the Captain understood when he had a boat underway? In other words, there were a number of people in the water. Those people had to be rescued, but given the weather conditions--it wasn't extremely hot, it wasn't extremely cold, the water temperature survival times and rafts--that goes again to balance and I want to understand that. Do you want to comment, Admiral?
A. All those factors would argue that he made the right decision to hold off in putting his people in the water. He

knew the help was coming quickly in the form of boats, not just an aircraft. The water was warm, relatively, and though it was not lethal in the temperature of the water for immersion times of the victims. There was--and incidentally a significant point I did not yet raise. The ship made attempts to converse with the inhabitants of the life rafts, but there was a sizeable language barrier. Neither side seemed to have multiple language skills, so they could not converse in a common language and this almost just caused confusion in the minds of the victims. After the fact, through the NTSB, we heard they wondered what they were trying to tell them from the Bridge of the submarine, when of course, what they were trying to ask is, are you alright and can we do anything, do you need immediate assistance to--and that sort of chasm existed in ability to communicate because of a language barrier.

And that further dissuaded the Captain from putting divers in the waters because he didn't think he had good enough information to send them in based on the language barrier. So that was another issue there, but he decided nevertheless--if there was someone in the water, but not in a raft, language barrier or not, his divers were going in. And so they were prepared to do that.

Q. With this language barrier--and the ability to look at this with hindsight, were there any members of EHIME MARU that were in a life raft--or I assume most of them were. It seems to be the description, they were all in a life raft. Were there any of them that were at some risk--high risk without immediate medical assistance and was that able to be communicated or not be able to be communicated?
A. The ship tried to determine that and that was a valid--I asked the question in the interview--this is of CAPT Brandhuber, how did you know you didn't have to do something extraordinary early on in first aid to save a life inside a raft. The ship was trying to solve that, but the language barrier impeded it and they were using their observation techniques--there ability to observe the demeanor of the people in the rafts. They did not see human body language that would indicate that was warranted. They were trying to judge by the facial expressions and the body language of the people in the raft if there was someone to that level of distress and they did not feel there was. And so they were trying in the ways that humans judge others to make those determinations absent the ability to converse.

Q. These observations then would only come, I assume, from two areas. They would come from the Bridge where you can visually--and I'm not sure how many watchstanders got up on the conning tower, the Conn or the other part of it would be from the periscope and I assume, but maybe you might want to explain--was I think you said they're sighting, they are looking for evidence of trauma or evidence of immediate assistance, a universal sign like arm waving or a cloth waving, whatever it might be. Any comments on that?
A. They were doing two things with the periscopes which of course gives much closer magnification than eyesight from the Bridge with binoculars, although we are not talking long ranges. We are within 100 or 200, 300 yards of these rafts in general, but the periscope was trying to look for people not yet in the rafts who needed to be rescued and that was their primary focus as I understand it and secondly they were looking in the rafts--and although only at each end of the raft could you look in because otherwise it was this roofed area, but they were trying to help make this determination, is there somebody in the raft who is in medical extremis. Now in hindsight there was one person who had ingested a lot of diesel water--diesel fumes or diesel oil and water and was in some distress. The judgment was made by the way that they could observe that that distress was not such that the person needed immediate care to survive.

And so those were the focus goals of the people on the periscope. In addition to looking for the help in arriving vessels and so forth and not have collisions and this went on well into the darkness hours. Number 1 periscope, my understanding, this does not have enhanced--a light enhanced system--a light intensifier system like Number 2 periscope does so it is less effective on a dark night to search than number two periscope is so they kept Number 2 periscope manned continuously and used the light intensifier mode as they could to further look for people in the water to make that search very diligent. Similarly on the Bridge, when it became dark, they had night vision goggles in the form of binoculars that are a similar type of system and they were using them periodically to also enhance the search for swimmers and a--I'm rambling now. Did I----

Q. Okay. Well let me help you on a couple of those cause I'm interested in the--GREENEVILLE is obviously first on the scene for the SAR so they are the unit at the scene, they become the SAR Coordinator for a period of time. How long did they act in the capacity of SAR Coordinator?
A. Admiral, good question. I know there was a--one of the interview statements, I believe it was from the--either the engineer, the Captain, XO, that comment on that--they were officially relieved fairly early on as SAR coordinator on the scene once the Coast Guard boat arrived and I don't remember that time. It was maybe an hour into the casualty.

Q. Okay, so there was a hand off for SAR coordinator from on unit to the other?
A. Yes, sir. And they were basically asked to stand off at that point so they wouldn't endanger the picking up of the survivors.

Q. And then GREENEVILLE participated then in the SAR efforts, but not as the coordinator?
A. Correct.

Q. And when GREENEVILLE left the scene of the SAR, they had been properly relieved?
A. Yes, sir. They were directed to enter port and that was the next morning.

Q. So, there was a turnover of both their duties and their assistance then in terms of the SAR?
A. She was directed when to stop searching and head into port, because clearly at that point there were other assets out there searching that----

Q. That could do it much better----
A. Were more efficient than GREENEVILLE at searching and GREENEVILLE was damaged, and we had an investigation to start and so forth.

Q. Many of the other units, you may not know this or not, but we may want to look into this, but the other units that arrived had night capability with them. The helicopters and the Coast Guard units had night capability. We are going to talk to the Coast Guard, but do you know?
A. I don't know, sir.

Q. Okay, I will assume there was--they typically act in that role day and night, both flare and other capabilities, goggles. I will assert in that. You made comment to us earlier that--and this will be my last question--you made comment to us that as a court we should look at the capabilities of U.S. submarines and I assume you meant the class particularly--excuse me the class of the GREENEVILLE as a SSN and potentially those lessons will be applied to other submarines in the U.S. about areas that we could improve or make recommendations to approve them. I'm thinking one of the things that we may do as a court--we could get into some highly technical areas, but what we can do--the power that we bring as a court is to insist to the right authorities that they review the SAR capabilities. Is that what you thought was a good role for the court?
A. Yes, sir, exactly. I think you should use your power as a court to motivate the Navy to use whatever resources it takes to work hard in this area to make us more inherently capable.

PRES: Thank you, Admiral. Cross, counsel for CDR Waddle?

Counsel for CDR Waddle, party (Mr. Gittins): Sir, I don't have many questions for you. I'm sure you appreciate that.

PRES: Counsel for LCDR Pfeifer?

Counsel for CDR Waddle, party (Mr. Gittins): No, I don't have many, sir.

PRES: Oh, I'm sorry. I thought you said any. I apologize, sir.

RECROSS-EXAMINATION

Question by the CDR Waddle, party (Mr. Gittins):

Q. Sir, would it be fair to say that the collision was a shocking event to the Captain and to the crew?
A. Yes, sir.

Q. And immediately after the collision you determined that CDR Waddle made an observation from the periscope. Is that fair, sir?
A. Yes.

Q. And he saw people in the water and the EHIME MARU sinking?
A. Yes.

Q. You would agree with me would you not that that would be a very shocking event for the Commanding Officer?
A. Can't even imagine.

Q. Notwithstanding that immediate shock, CDR Waddle undertook the appropriate actions that we would expect of a professional naval officer under those circumstances?
A. Absolutely.

Q. You indicated that CDR Waddle prepared to put divers in the water in the event people in the water were in extremis or even in the rafts were in extremis, is that fair, sir?
A. Yes.

Q. The divers that were onboard the USS GREENEVILLE, sir, they are not rescue swimmers, correct?
A. Correct.

Q. They are mission divers that provide security for the ship, check the screw, things like that, correct, sir?
A. That is correct. They are lesser capable or trained than a rescue swimmer would be.

Q. They are not the equivalent of--for example a Coast Guard rescue swimmer that jumps from a helicopter to rescue someone in the ocean?
A. It may occasionally be individually they are that capable, but that is not the requirements and that's not generally how we train or what we expect of them.

Q. And that is not the training the divers had onboard GREENEVILLE. Is that true, sir?
A. That's correct. To my understanding, they received a lesser amount of training that standard SSN's divers would get.

Q. So, with respect to the operation that might have included putting divers in the water, that would have been a risky operation for those divers, correct sir?
A. I think it would be a very risky operation for the divers as well as who they were going after.

Q. Sir, you talked a little bit about the problems with bringing alongside rubber rafts, alongside a 688 class submarine. The hull treatment on a 688 class is a rubberized hull treatment, isn't that true, sir?
A. It is.

Q. And the rafts that were in the water were rubberized or rubber rafts, correct, sir?
A. That's correct.

Q. And one of the problems that you're aware of in your experience as a highly qualified submariner is that rubberized coating could very easily catch a rubber raft and flip it over, correct sir?
A. Absolutely.

Q. It happens to highly trained and experienced SEAL teams when they embark or disembark SSN 688 class submarines, correct, sir?
A. Correct.

Q. So it was reasonable for CDR Waddle not to make efforts to bring the rafts along side, sir?
A. Absolutely. That would have endangered the people in the rafts. That was good judgment in my opinion.
I think he tried very hard to do the next best thing which is to get close to the rafts without touching them to best observe them and render assistance if something changed, the raft flipped or a person in it was dying of a wound or that sort of thing.

Q. CDR Waddle had both periscopes manned with periscope watches?
A. Yes.

Q. And he, himself, took the Bridge?
A. I think he probably--I'm not sure he was there continuously, but at least for some period, yes, I think initially.

Q. Posted an OOD and a lookout?
A. Yes.

Q. And the OOD was one of the senior officers onboard the vessel, a LCDR?
A. Yes, a LCDR.

Q. And he had two divers on the Bridge ready to go if there was any need for them, correct, sir?
A. Absolutely. They were there right at the start and I think he later sent them below to standby because the Bridge is so confined.

Q. Sir, is there anything that you could think of that CDR Waddle, given the situation he was in, could have done more than he did?
A. No.

Q. In your interview with the Chief of Staff, CAPT Brandhuber, he indicated that he recognized the potential stress and shock of the event of the collision on CDR Waddle, correct sir?
A. Yes.

Q. And it was based on his evaluation, he believed that CDR Waddle was capable and should continue the SAR rescue effort after the accident, correct sir?
A. Correct, sir. Absolutely he said that specifically to me.

Counsel for the CDR Waddle, party (Mr. Gittins): That's all I have, sir.

PRES: Counsel for LCDR Pfeifer?

Counsel for LCDR Pfeifer, party (LCDR Stone): No questions, sir.

PRES: Counsel for Mr. Coen?

Counsel for LTJG Coen, party (LCDR Filbert): No questions, sir.

PRES: Okay.

CC: Sir, at this time I need to warn RADM Griffiths. Admiral, you are directed not to discuss your testimony in this case with anyone other than a member of the court, parties thereto or counsel. You will not allow any witness in this case to talk to you about the testimony he or she has given or which he or she intends to give. If anyone other than counsel or the parties attempt to talk to you about your testimony in this case, you should make the circumstances known to the counsel originally calling you as a witness. Do you understand that, sir?

WIT: I do.

CC: Sir, that's all we have.

PRES: Admiral, before you step down, I think the court appreciates your testimony here for what seems like probably a long time, but it's been a full 4 days for you. You've had to recall a lot of facts, we find it--we all find even though you

are a very senior officer in the U.S. Navy, you have a very high technical competence in submarines. We've all found your testimony to be very compelling. You don't have all the facts, you didn't have the opportunity to get all the facts because you did what you were asked to do, which was to conduct a Preliminary Investigation. And we think the--given the time constraints that you had, that your thoroughness has helped the court--to guide the court in areas that we need to go look. We take your recommendations, your points you made yesterday about other areas that we've got to look at very seriously, and I think you will find that the court will go down those paths the most comprehensive way that it can.

But, I do appreciate what I think has been a very straight forward, compelling, insightful evidence and testimony for the members and I'm sure for the counsels and for the parties. And, I can't tell you how personally I am satisfied to have an officer of your caliber take us through these events so we have at the beginning of the understanding about how thorough we need to be to understand what happened on GREENEVILLE on the 9th of February. Thank you.

WIT: Thank you, sir.

CC: You're excused, sir.

[The witness withdrew from the courtroom.]

CC: Mr. President, at this time, the court calls CAPT Tom Kyle to the stand.

PRES: Very well.

[The bailiff did as directed.]

CC: Sir, for the information of the court, parties, and counsel, CAPT Kyle will be testifying about validating the reconstruction efforts that we've seen, to try to reconstruct the tracks of the EHIME MARU and the GREENEVILLE and he will also testify about his actions as Acting Chief of Staff of SUBPAC on the afternoon of 9 February.

Tom Kyle, Captain, U.S. Navy, was called as a witness for the court, was sworn, and examined as follows:

DIRECT EXAMINATION

Questions by Counsel for the Court:

Q. Captain, would you please tell us your name, spelling your last name for the record.
A. My name is CAPT Thomas Kyle, spelled K-Y-L-E.

Q. What is your rank, sir?
A. Captain, U.S. Navy.

Q. Would you tell the court what your current duty assignment is?
A. I'm assigned as the Deputy Chief of Staff for Tactics and Training at Commander Submarine Force, U.S. Pacific Fleet.

Q. Is that known as the N-7 department?
A. Yes, it is.

Q. How long, Captain, have you served at COMSUBPAC in the N7 department?
A. I've been there roughly 2 1/2 years.

Q. Would you please tell us what your duties and responsibilities are?
A. I am the Department Head responsible for development of submarine tactics, evaluation of new tactics. I also oversee the At-Sea and Formal Schools Training for the Submarine Force in the Pacific. I'm also in charge of overseeing all weapons logistics issues for submarine weapons in the Pacific.

Q. Captain, if you could work backwards for us and please describe your previous duty assignments and responsibilities associated with those duty assignments?
A. As I said I have been at this assignment for about 2 1/2 years. Prior to this I was assigned as the Commander Submarine Squadron ONE here in Pearl Harbor. I had under my responsibility as many as 14 submarines and as few as maybe eight. I was responsible in that job for the training, readiness, material condition of the submarines assigned to my squadron and as such spent a lot of time riding the submarines, observing their operations. Prior to that assignment--I was in that assignment for 2 years. Prior to that assignment, I was the Prospective Commanding Officer Instructor for the Commander

Submarine Force, U.S. Pacific Fleet. There are two such instructors, one in the Pacific, one in the Atlantic, and my duties in that job were to train--specifically train officers going to command the submarines on tactics and leadership skills, that was also a 2 year assignment. Prior to that assignment I was on the SUBPAC, Submarine Force Pacific, Tactical Readiness Evaluation Team as a senior inspector and as such I conducted about 50 to 60 Tactical Readiness Evaluations of submarine and Pre-Overseas Movement certifications where we go out and evaluate the proficiency of the crews in operating a submarine in a tactical proficiency. Before that I was in command of USS Puffer in San Diego for 3 years.

Q. Sir, how many years have you been qualified in submarines?
A. I have been qualified for about 24 years, 1977.

Q. And how much of that time has been in at sea operational environment?
A. Since 1977--well, I was in a operational environment when I qualified. Of my 27 years in the Navy, roughly 25 or 24 have been in operational assignments.

Q. Captain, I would like to kind of focus now on your current duties as the N-7 at COMSUBPAC. Do you supervise a division or unit within the N-7 department that specializes in submarine track reconstruction?
A. Yes, I do. As part of my tactical development in analysis function I have a team of individuals who are--their specific assignment is to reconstruct naval exercises--submarine exercises and to discern lessons learned out of--out of at sea operations. I also supervise the At-Sea Tactical Training and Assessment Group and they also do an underway reconstruction capability or exercise evaluation of reconstruction and dissemination in projects for the ships at sea, so there’s two different branches that do this type of work.

Q. What division is that in your department?
A. The former--the dedicated Tactical and Analysis Group is N72--works in the N72 group and the other one is in the N-70 group.

Q. Did both the N72 and N70 groups participate in the reconstruction of the EHIME MARU and USS GREENEVILLE tracks?
A. Yes, they did.

Q. Could you describe the general make-up of those two divisions and the experience levels of the individuals that comprise it?
A. Yes, I can. The N72 group, the tactical analysis group are comprised of civilian employees of the Navy that have been working in this function. I can't even begin to estimate--probably 15 or 16 years. They are highly skilled at what they do. They are very detailed in their reconstruction work. They have a series of tools they have to do that reconstruction that help them in that process, computer-based skills and tools as well as a good understanding of submarine tactics in order to understand--to put the right context in the reconstruction products. I have a great deal of confidence in their ability.

The other group, the one in the N-70 group, the At-Sea Training Group, are comprised of naval officers with considerable experience. When I mentioned my background and when I said I was on the Tactical Readiness Evaluation Team, that's the same group that I was on back in the early 90's. They go to sea regularly and evaluate ship's performance. They have developed a computer-based program that enables them to reconstruct or demonstrate to the ships that they are evaluating what has happened in the exercise it just completed, so they can use that product to enhance the training that is being done at sea.

Q. Sir, do both of these teams report directly to you?
A. Yes, they do.

Q. And do you personally get involved in the reconstruction efforts?
A. Personally in sense of actually doing the reconstruction per say, putting the dots on the--no I don't. I do go through a process of looking at the results. I may pose further question for evaluation--like more insights, but I don't get involved in the detailed entering of data or plotting the tracks or anything like that.

Q. Captain, you're aware of the collision that occurred between the GREENEVILLE and the EHIME MARU on the 9th of February?
A. Yes, I am.

Q. Were the N70 and N72 groups that you just described, were they involved in the track reconstruction?
A. Yes, they were. They were assigned to do that independently. I wanted independent products so they did not collaborate in their effort. They came to independent

conclusions and then we brought them together after they were done with their products.

Q. Sir, to your knowledge is the reconstructions that were done, was that information shared with RADM Griffiths the preliminary investigating officer?
A. I don't know that directly. I was also assigned as the Navy's representative to the National Transportation Safety Board investigation of this accident and it was a conscious decision to try to maintain separation between those two investigations again for standpoint--from the standpoint of independence. And as a result--although I did converse with RADM Griffiths during his investigation, we did not share details of how each one was going.

I do believe--what I do know is that he had access to some of the same data that we used in our reconstruction, but not a complete picture. Some of this information and the data became presented in a more useable fashion after he was near completing or had completed his investigation. He was on a very tight timeline. He had to complete his Preliminary Investigation in a couple of days. We've had the benefit of more time to gather the data, decipher what we can understand and do a more complete product since then.

Q. And Captain, were you initially assigned to support the NTSB effort at reconstructing the tracks of the two ships?
A. Yes, I was. NTSB investigation works on a party system. Their were three parties named, the Navy, Coast Guard, Japanese owners of the vessel. As such, as one of the parties--I was representing one of the parties--basically as a subject matter expert brought information to the NTSB investigation and basically pushed ahead their investigation as one of the parties of the NTSB.

Q. I would like you to tell the court if you would the kinds of data that you went out and collected to support the reconstruction effort. How did you go about doing that?
A. Again, primarily it was in the context and in the order directed by the Investigator in Charge of the NTSB, so initially we focused on statements from the Japanese crew and students. At the same time we gathered the data we could from the ship. I know that the shipboard data, the GREENEVILLE's data was basically taken off the ship in support of RADM Griffiths' investigation and sequestered basically, wrapped up and put aside. A copy of all that data was made for the NTSB investigation. Several days into the NTSB process, we gathered

that data together, opened it up, we looked at the Sonar Logs, Fire Control Logs, we interviewed all the participants, the main players on the ship, the Commander Officer, Executive Officer, Officer of the Deck, Sonar Operators, Fire Control Operators. A good list of the ship's company. We did investigate the data recorded in the Sonar Logger at some--in some depth and that has really formed the principal data on which the reconstruction data is based.

CC: Can I stop you right there, sir. LCDR Harrison can we have the sonar logger data files marked as the next court exhibit in order?

CR: Yes, sir, this will be marked as Exhibit 39.

CC: I believe copies of the Sonar Data Logger files have been provided to the parties and Counsel for the Parties.

ASST CC (LCDR HARRISON): Yes, sir.

Q. Captain, how do the sonar logger data files aid in the reconstruction of a collision?
A. Well, we found that this is really our first reconstruction using this product. This Sonar Data Logger is a recent addition to ship's equipment. We are in the process of modernizing our sonar suites on our submarines throughout the Navy, Pacific and Atlantic. Really upgrading the processors and modernizing the equipment--bring them up a couple decades as a matter of fact.

One of the products that came with this modernization package was this data logger facility and we have never used this before. This happens to be the very first time we've had an opportunity to reconstruct any event using this information and we've found that it is particularly useful.

Q. Why is that, sir.
A. Because it records, it archives on a hard drive in the sonar system, one second data from basically all the ships parameters, the course, speed, pitch, roll, several other parameters that are relevant to the GREENEVILLE's track in this case, the submarine's track as well as a good deal of the tactical data that is being processed on the ship. Specifically, any contact that is being tracked by the sonar system is logged there and fire control solutions are logged there at 15 second intervals. As far as reconstruction effort, that data is here for--never been available, we've had to go with a lot more less often recorded data and not a copious amount. So, we were able to

download this information off this hard drive and it really aided in the reconstruction of the USS GREENEVILLE track and the contacts that the GREENEVILLE was tracking on the day of February 9th.

Q. Captain, did you bring a series of slides with you to describe the reconstruction effort?
A. Yes, I did. I believe they are loaded----

CC: LCDR Harrison, could I have you start up our Power Point slide machine, please? And, could I have this series of slides marked as the next court exhibit in order, please.

[LCDR Harrison did as directed.]

CR: Yes, sir, this will be marked as Exhibit 40.

CC: Exhibit 40. And that's all 16 slides as Exhibit 40?

CR: Yes, sir.

CC: And copies of Exhibit 40 have been provided to the parties and counsel. We have to wait just a minute until the machine warms up.

Q. CAPT Kyle, can you please describe for the court what we're seeing in the first slide?
A. Yes, I can. This is our best overall depiction of the tracks of the EHIME MARU and the GREENEVILLE the day of February 9th. They are based on a couple of things--I'll tell you how this is basically generated. This purple or pink line coming down as it indicates is EHIME MARU. That track was generated based on the statements of the Master of EHIME MARU and the times that he said he left port and the times he passed Buoy Hotel in Honolulu Harbor, the speeds and courses that he set--he set his auto helm to 11 knots, course 166, that he left at about 12:00. He had some trouble stowing his anchor and speed was lower in the beginning and so we took that into account and drew that track.

It was verified by some NTSB data came back--it's a fact that the air traffic control radar in Honolulu Airport and an Air Force radar, similar type of radar, actually had track of a vessel coming southbound out of Honolulu that seemed to mesh with what the Master had said, it was on course one-six-six, looked like speed about 11. We verified that was on one-six-six. So this track we feel is fairly accurate. It was anchored

right here at the collision point based on the GREENEVILLE's reported position of the collision.

Q. So, for this reconstruction you used GREENEVILLE's reported position as your anchor for both the EHIME MARU and GREENEVILLE?
A. Yes, that is that point right there [pointing laser at exhibit]. To the degree that the position log by GREENEVILLE was accurate, that point is accurate geographically. I must point out that even if this is not exactly the right position geographically, the relative tracks between EHIME MARU and the GREENEVILLE remain anchored to this point wherever it may be and I think the relative tracks are absolutely very tight. It may be off a few hundred yards based on the position reported by the GREENEVILLE.

Q. Could you briefly describe the--how the GREENEVILLE's track was reconstructed?
A. GREENEVILLE's track on this particular effort was taken--again, anchored at the collision point using the sonar logger data, the one-second data, which as I said a moment ago includes course, speed and depth. Basically, that was back dead reckoned using that data. At 1 second intervals it becomes very precise in here once we go back. We basically annotated this track, although you can't read these very well, annotated it with key information from other logs that were maintained by the GREENEVILLE or data that was in the Sonar Logger itself. So this is backed out based on the sonar logger data. It is not tied to any other geographic points. Basically the only tied point on GREENEVILLE is right there [pointing laser at exhibit].

Q. Captain, you have had a long opportunity to take a look at this reconstruction. How comfortable are you with the fidelity of the reconstruction effort?
A. I am very, very, comfortable. I think this is one of the best products that we developed, solely because we're using this high intensity data from the Sonar Logger at every 1 second. We have never had the privilege of having that kind of recorded data before.

Q. Could we have the next slide please? Captain, could you describe what this track reconstruction is?
A. [Pointing laser at exhibit.] Yes, I can. This visual aid assists--was designed to present the difference between my two organization's independent efforts. This dark blue line right here [pointing laser at exhibit] represents the track from the previous slide. The green track is the reconstruction effort from my At-Sea Training Team's efforts, as is this red line to

the west--slightly to the west of this purple line. The N70 reconstruction is a little bit west in all regards, and the reason that is, is they anchored, not only anchored the two tracks at this location [pointing laser at exhibit], but- they also anchored the GREENEVILLE's track to their last logged inertial navigation position rather than just back DR'ing. They had two points that anchored and they did a best-fit analysis between those two anchor points. I know the ESGN or the inertial navigation position on the GREENEVILLE--although I don't know the exact performance on that day or that minute--could typically be off by 500 yards to 1,000 yards very commonly. And--so I would not--I think for all practical purposes these points are roughly the same based in the accuracy of that inertial navigation.

The key thing is though, is the area right before the collision, this point [pointing with laser] this point from the last five to 10 minutes are almost on top of each other. They are very, very, tight in this area. So if I was to tell you where the most accurate where its in agreement, their all in agreement right in this location here around the collision point.

Q. Could we have the next slide please? Captain, would you please describe this third reconstruction?
A. This is a product we just received this week from the NTSB. We had--at their request we had sent them a copy of the raw data from the Sonar Logger. Basically it comes off the hard drive and the Sonar Logger is converted to a digital tape. We sent the digital tape data to the NTSB Headquarters in Washington to their Data Analysis Group, which does similar efforts with flight data recorders and so forth--commercial or aviation accidents. Their technical team did similar process of reconstructing the track. As you can see here [pointing laser at exhibit] this is old data, but from coming north bound here the two tracks are absolutely on top of each other and in their display--this is actually their presentation that they sent us--this green track or circles right here [pointing laser at exhibit] represent the air traffic control radar information that they received from the FAA. So again, you see that very tight agreement. And the NTSB did this completely independently in Washington from our efforts here.

Q. So essentially what we're seeing is the NTSB track overlaid on top of----
A. Yes. There are actually two tracks here if I could split these across, you would see a dark blue track and a light blue track, but they are actually on top of each other. Absolutely

on top of each other. They did not--this track here [pointing laser at exhibit] this red track is the track from the reconstruction we saw on the first slide. The only track they provided for the EHIME MARU was the green FAA information.

Q. Can we have the next slide please? [Slide forwarded.] Captain, could you describe this reconstruction?
A. This product was received just yesterday. This reconstruction was done by the real world analysis division of a Commander Submarine Development Squadron TWELVE, which is home-ported in Groton, Connecticut. They have a cell, similar to ours, a data reconstruction group at that location. They do all the Atlantic tactical development reconstruction products. But they again, had absolutely no knowledge of our product. We sent them the data. We sent them the raw sonar logger data and said--we asked them to do two things. Reconstruct the two tracks and then speculate or come to any conclusions as to any of the sonar contacts that were included in that sonar logger data that may have correlated to the EHIME MARU. They came back with this answer. Our reconstruction again is in blue. Theirs is a little bit to the west because they did much the same as my other team did, they anchored--we didn't tell them how to do the reconstruction they chose this anchor position here that correlated to the ship's last logged inertial navigation position. So again, it shows sort of a western set in comparison to our reconstruction effort and they also picked a point, one of those ATC air traffic control radar points and decided to anchor the collision point at that location instead of the position logged by the GREENEVILLE. You can see that anchor point is a little bit to the left, but if you follow along, you can see that in a relative sense there is no difference in the tracks it's just a different anchor point for the collision. So based on the four independent efforts, I am very confident that this depiction of the overall track of the two vessels is very accurately depicted at this point.

Q. Can we have the next slide please? Captain, would you describe what the data on this slide is telling us?
A. The data on this left slide here [pointing laser at exhibit] this pink line--this plot right here is a plot of the bearing from the GREENEVILLE to two different contacts or two different items over time. The pink line is the bearing to the reconstructed track of the EHIME MARU as depicted on the first slide that I showed up here. The little dots, the blue dots, along the track are the log sonar bearings to contact S-13 that was also logged in the Sonar Logger.

You can see that the fit through most of the track is very, very, close to the reconstructed track of the EHIME MARU. It falls apart a little bit here, but it's noted that the ship's speed, GREENEVILLE's speed, during that green banded area was greater than 20 knots and there is some significant maneuvers done in there, high-speed turns and so forth. And I believe the reason these dots are over here [pointing with laser] and not on the pink line is that the tracker had tracked off during those high-speed maneuvers and required to be reset on to the target, which is not uncommon for the sonar trackers.

The high-speed, the signal from the tracked ship kind of gets lower in relation to the noise around the boat and the tracker has a tendency to drift off. I think that is just poor tracked data. Up at the end here it's not quite lined up, but that's very, very, close range and so it's--it's not--that's a very tight reconstruction by comparison to most reconstruction efforts. So what that does--it confirms to me that the reconstruction--that's one added element of competence that the reconstruction effort depicted on slide one is very, very, accurate. Because we took those independent track generations and then we checked it against the sonar bearing and they match up exactly to one of the sonar tracked contacts and by default or by corollary here, I pretty much conclude that Sierra 13 was the EHIME MARU. Admiral?

PRES: Captain, I have a question.

WIT: Sure.

Questions by the President:

Q. There are two periods that are fairly long periods of contact prior to the high-speed maneuvers and afterwards. Can you tell me what the ranges of signal-to-noise ratio were during both these periods?
A. Signal-to-noise ratio in these periods were fairly low. I don't remember them right now. I can look them up. I have that data available and can follow-up with that information. It's in the Sonar Logger. It's one of the items logged in the Sonar Logger, but it is fairly low in the minus--depending on GREENEVILLE's speed, it's in the minus numbers, -5, -7, -10, but it's a lot of data and it's varied a little bit. Up at this point it's--the SNR in this phase right here [pointing laser at exhibit], as the GREENEVILLE came out of this turn right here [pointing laser at exhibit] was reducing speed in the SNR built because the speed of the GREENEVILLE was slowing down.

I should explain for everyone's benefit. SNR means signal-to-noise ratio and that's really a comparison of how much signal a contact is putting out relative to the noise around the submarine sonar system. At high-speeds, the noise around the sonar system gets higher because the boat is running through the water at higher speed. The signal from the target remains the same, the contact, so the SNR goes down effectively even though the strength of the signal from the--the true strength of the signal remains the same. Then the SNR built very strongly on this leg right here [pointing laser at exhibit] up to +7, +13, and I think I even saw a +20 in there [pointing laser at exhibit]. They're very much stronger--that's the strongest track they had on the EHIME MARU or Sierra 13.

PRES: Thank you.

Q. Captain, and again it's your N70 or N72 group that prepared these?
A. N72 prepared--well both teams prepared these plots very similar to this. This particular plot right here [pointing laser at exhibit] is one produced by the N72 group. The right hand side of this slide is a different plot. It has time across the bottom and has range along here [pointing laser at exhibit] and the pink line, again, depicts the reconstructive range using slide one between the EHIME MARU, or Sierra 13 actually, on the EHIME MARU and the GREENEVILLE. The green dots here reflect the fire control solution data logged on the Sonar Logger for Sierra 13 in terms of range. It's only range only.

I should point out a couple of things about that. These look like on this depiction here as a bar, but they are actually individual dots that are very close together and they look like a bar. Secondly, it is an anomaly of the Sonar Logger that it only logs range to the nearest 1,000 yards. So that's why you see a streak along here and all of a sudden a shift up to the next 1,000 yards as the range varies between say--well, it looks like probably 8,000 yards and that's probably 7,000 yards. So anywhere between there and it also makes a step change as the contact moves--the contact moves from range to range.

It shows here that out in this early time that the fire control solution was not particularly accurate in terms of range. But, this point [pointing laser at exhibit] was a pretty good set. And at this point, right before the collision, a fire control range looks very good in comparison to what the actual range was.

Questions by a court member (RADM Sullivan):

Q. Captain, is that the system solution that's recorded or is it one of the various sundry methods of doing TMA on the fire control system?
A. Sir, as I explained to the court when we were over at the training center, there are really three possible solutions that are portrayed in the fire control system. One is the trial solution, which is what the operator is looking at upon his screen there when he is working the solution. The second is the MATE solution to serve as a place holder solution that he can come back to, to revisit if he has to move away. And one is the system solution--and that is the system of record solution for that--target at that time. These dots portray the system solution. In other words, what was accepted with--that somebody had set as the programmer or the system solution of record for that particular target at the time. And that is a physical action you have to do on the console to promote that solution that he is looking at to the system solution--is a physical button push saying basically I believe this is the best answer right now and pushes that button to make that happen. Someone on the ship had to believe that was the range at that time and so on and so forth.

Q. I believe you mentioned that prior to about this time where the range is--the system range is 15,000 yards and starts coming in. Part of that time the solution was not very good and it was fairly good after that. What do you base that on?
A. I base that on the fact that I feel very confident that the pink line reflects what really happened between the two ships. It is a depiction of the range between the EHIME MARU and the GREENEVILLE from basically 1230 to the collision point. I have also, from this plot over here, believe that Sierra 13--because the bearings match so closely--I believe that Sierra 13 was the EHIME MARU. These are the ranges for the fire control solution of Sierra 13 over time. Before this time, you can see that if in fact this is an accurate depiction of the range that the fire control solution range does not accurately follow the reconstructed range. So I would say that in this period of time the solution was fairly rough. As I described over at the training center earlier in the week, developing the solution is an iterative process. You put up a possible answer and you let it generate for awhile and you come back and revisit and reassess.

It is not that unusual in an early development of a solution to have errors--significant errors until you recognize--until you maneuver the ship and restrict the number--limit the number of possibilities for that particular solution. It's pretty clear in this area [pointing laser at exhibit] that was a pretty good assessment, but the range did not draw down so I would say that was a good range estimate at that point, but perhaps not such a good course or speed estimate because the range didn't follow that track in. But in this area, you can see that there was set there and a set here, and then down, i**t** looks like a pretty good solution was set just prior to the collision point.

Q. Captain, can you infer anything about the operator looking at that? From just my standpoint here, and not having any experience with these kind of systems, you've got a fairly steady sonar contact or a very predictable path from about Thirteen hundred up to, what Thirteen twenty five, Thirteen twenty three I can't--somewhere in there. There is a very good correlation of sonar. You've already mentioned that it's a low signal-to-noise ratio, and my understanding here listening to testimony is that indicates that it might have been--could be a very distant target or it could be a small target, a small ship in terms of its ability to generate noise and that's why you have a small signal. Is there an indication here about the Fire Controlman's technique that it takes a while for him to figure out or is he relying more on the system and suddenly he gets it right because I notice at 1300--around 1325, he finally gets the system and their operator together get the range right and then we immediately get what looks like a disconnect--a little disconnect about where that targets going and then down to the bottom. What do you see in there in terms of technique or skill?
A. Yes, sir. As I tried to point out in the demonstrations at the training center, the program that the Fire Control Operator is using is a computer assist mode and the greater the change in bearing rate over time--the change in bearing over time, the more quickly the solution will converge to an answer. You can generate that bearing by the contact being close and he's just going by you, or you can generate that bearing by maneuvering the submarine to generate the bearing rate, but once you start generating bearing rate you can start getting answers.

If you notice on this bearing plot, there is no bearing rate, so he is working a low SNRR contact. And coincidentally, whatever the ship was doing, it was not generating between the two ships much bearing rate. So I would not expect to see a very accurate solution with this kind of bearing change over time. You could

have many different possibilities. You could have answers up here [pointing laser at exhibit], or up here, that would probably look fairly good on the display--look reasonable and would fit, but would be sort of--it's not very well refined yet. It hasn't been narrowed in to a unique answer.

What I think happens here [pointing laser at exhibit] if I can just--this is more surmised, but you see this is the time--it looks like about 13, this is 10, this is 20, so 1320, right up in here we pick up some bearing rate and he comes to an answer. Generally speaking, what he is solving for here is the ship's--he is matching the bearing rate with the solution and generally speaking, two possibilities that would initially match a bearing rate. One with a closing and one with a opening course that matches the same amount of speed going perpendicular to the line of sight between the two vessels. If you match those, you match the bearing rate, and that is what he probably did, but there could be an opening and a closing aspect. I would say based on the fact that his range continued to generate here did not follow the track in, he selected an opening aspect. Just on analysis, I happen to know what that solution was that they logged in there. It was in fact, an opening solution and that is not, again, unreasonable. The general technique, however, is you assume a closing aspect for conservative sake. If you don't know one or the other, you would tend to pick a closing--want to pick a closing one and evaluate that one first. If it doesn't work out right, then look at the flip course, which is the opening aspect.

Q. When you say you would assume are you talking about just the Fire Control Operator or just Sonar, or anybody else who might be involved in this problem? Who would--when you say they would normally assume a closing----
A. Primarily the fire control--every--the mentality normally trained to all of our tactical analysis parties is to start with a closing solution because that could generate to a more tactically challenging position. Start with that first. If that doesn't pan out, if you don't know which one it is, then evaluate the other. In fact, there is a button on the fire control screen that just says flip course and it will portray the opposite course and let you do a quick, very easy, analysis to look from closing to opening and see which one you like better, which one tends to fit better. It is designed in, it's recognized as often being the case of two different possibilities. So I would say the whole party goes to work initially with a closing presumption and then tries to--if that doesn't pan out then you go look at the opening.

Q. This last dot [pointing laser at exhibit] can you explain what it means or is that an accurate range or----
A. That is not an accurate range. I know a little bit about that dot. It is back out at 9,000 yards. It would indicate--there is a couple of interesting things about the timing here. For instance, this update to this close range position happened after the ship was ascending to periscope depth and this one was done--this update was done after the collision----

Q. Which was updated the----
A. This one, [pointing laser at exhibit] the one that comes from this range down to this range. That update in system solution happened while the ship was already making its assent to periscope depth and this update was after the collision was done. I have thought about that quite a bit. How could that happen or why is that in that time frame and, again, I don't know precisely but I could go through a scenario which sort of explains all that a little bit. As I mentioned, the system solution is a discrete action to hit a button on the screen that says I buy what I am seeing on my screen and I want it to be the system solution, I think this is good. That is after a period of time of evaluation and looking at the process and watching the solution generate and evaluating that bearing different to dot stack that I showed you over at the training center. So actually the good solution was probably portrayed on that screen before the ship began its assent to periscope depth because the Fire Controlman was sitting there evaluating that solution probably while the ship was at 150 feet making preparations to go up. Once the ship began its assent, he got around to saying I'll update system at 103 feet going up because I really believe this is a close fit. That is a possible scenario. I don't know--that is truly speculative in my----

Q. Understand----
A. In my view, this dot [pointing laser at exhibit] in discussions, interviews with some of the personnel, particularly the Fire Controlman during the NTSB interviews indicated that the ship got to periscope depth back in this area somewhere right before that time. The scope was--he looked around for the contacts, no contacts at this range, 2,000 to 3,000 yards were reported or seen by the scope operator, so the Fire Controlman assumed that the contact could not be that close. He needed to be farther out; otherwise, he would have seen him because it is so close and he, in his mind, thought I have to make something work farther out. Now the rest of the data for this particular

dot shows a solution that is not possible. It showed a 99 knot target, which indicates to me that he could not make it work. It did not fit. That is typical if you try to make the range go, but the rest of the parameters do not fit to make this dot stack stay vertical and zeroed. So he is trying to make it work but it is not working, the collision happens, gets distracted with the SAR efforts or further on duties; for some reason he updates the system on something that is farther out. I can't explain exactly why, but that is only a surmise.

Q. He might of had it in trial?
A. He might of had it in trial trying to make it work. Assigned some other job and then entered system, but it had to be--the trial had to be up there for a period of time before he promoted it to system.

Q. One more question please. If you were--in your experience at sea doing this job, how would this Sonar Supervisor describe the type of track he had on Sierra 13 both prior to the high-speed operations and then after the high-speed operations? In other words, what type of report would he have made--again, this is your opinion, but what sort of if your--quality of track would he have made?
A. I mentioned earlier this is lower SNR, but this is like medium range. It's good sonar contact. He is tracking--the Sonar Operator would say I'm tracking a contact bearing 010, medium SNR contact. If he saw a contact with +15 to +20 SNR, I would expect him to say that would be a fairly good indication of a close contact that is fairly loud.

Q. Would you expect to, again this is typical in your speculation, to be able to classify that sort of contact other that the fact that it is a surface contact?
A. Yes. He would probably classify it--you could classify by even by nature of sound as to heavy ship, merchant, warship, light merchant, and I would not be surprised if the EHIME MARU would be classified as a light merchant based on the nature of sound and there should be some classification data with high SNR contacts. You should be able to get some classification data on that target to indicate how many screws it had, what speed it was going, and make a more definite classification.

MBR (RADM SULLIVAN): Okay, thank you.

PRES: I've got a question.

WIT: Sure.

Questions by the President:

Q. It goes back to the signal-to-noise ratio, my understanding was from earlier testimony that if you had a low signal-to-noise ratio target, you could make a couple of assumptions without really knowing much about the target. It could be a target that was a long distance away or it could be a relatively small target close in.
A. Yes, sir.

Q. Well, I'm saying the Fire Controlman seems to sense that it's close in. His first, you know, trials or about where this target is he's sensing, well I will try close in. So, he's assuming that he's got a small type of target or a quiet kind of target, I guess, that's close in and he goes there for awhile until he suddenly "ah" I think I know where this thing is, it's here [pointing laser at exhibit].
A. Right. You are referring to--from the first part here [pointing laser at exhibit] up to there?

Q. Yes. And then he goes and says well maybe it's going away, but there doesn't seem to be much correlation or collaboration than between Sonar and Fire Control on signal-to-noise ratio, so who is getting the information on the signal-to-noise ratio on Sierra 13?
A. Signal-to-noise ratio is presented on the Fire Control Operator's screen. That's part of the data that is transmitted from Sonar in addition to bearing, the signal-to-noise ratio is presented there and it's available for his own personal analysis. It doesn't have to be conveyed by voice anyway, it is set with the data coming from Sonar, but I wouldn't put too much conclusion on a lower SNR target. The SNR on these are not really low. I mean, they're sort of medium and that could be, as you say, due to a distant contact, it could be to acoustic shadowing if the sound is being bent to the bottom. It could be due to a quiet contact, one that's somehow isolated. So, the normal practice for a fire control of what the guidance says to him is to select the predicted range of targets of that nature based on the acoustic conditions and start with that range. Just work that first if you know nothing else about it. Now Sonar in some cases can provide range information to get them in the ball park. In this case, I don't think it was available and starting at 10,000 yards is probably a little too close honestly, based on the sound conditions available that day. I have data that shows that sound conditions were great and they could hear 30,000--15,000, 30,000 to 40,000 yards, all the way

to land basically from where they were. So I would--if I was inspecting this individual, I would say he is not following the guidelines. He should be starting out here some place probably where these dots are [pointing laser at exhibit], is a reasonable start.

Q. But it goes to my next question. Is anyone backing this individual up--I mean signal-to-noise ratio seems to be like an important consideration right now, i.e. when Sonar goes and looks over his shoulder, or the Officer of the Deck. Is there some interest here? It all goes back to, you know, what I think may be is this point about the CEP. You have a low signal-to-noise ratio target out there, you've got someone trying to guess in trials. Is there any backup for the Fire Control Technician on Watch to say, "I think you may be off here a little bit because my correlation says it ought to be here." So, that information goes to what, the Officer of the Deck? Help me with this one, so I understand.
A. Yes, sir. In a normal tracking situation, there is--Sonar, although they have no processing tools in there to develop the solution, they will try to do mental estimation of what the range is and they will come up with their own answer, it's sort of a competition. The Sonarmen like to try to come up with the answer independently and drive it by doing mental analysis using mental power to come up with an answer and they will share that answer with the Fire Controlman. They will get on the phone and ask what are you holding for a solution on Sierra 13. And, if there's a great disagreement between the two parties, they'll come to some resolution, they'll talk back and forth, that's at the Operator level. Additionally, the Officer of the Deck, who is the direct overseer of the Fire Controlman of the Watch, has an opportunity to provide feedback and says based on the conditions today, I think the range is farther. He is the fellow that would be back, you know, the team concept between Sonar, Fire Control, and the Officer of the Deck in processing the contact is how that feedback is supposed to occur.

Questions by a court member (RADM Stone):

Q. Can I just follow-up on that because for me it's a very important point in understanding the internals here in the Control Room on teamwork. If in fact, of any submarine, the FTOW makes a mistake, in that he breaks down on that job, there are mechanisms of how our nuclear submarines operate, so that you don't have a single point failure if the FTOW doesn't do his job.
A. Right.

Q. And your answer to the question is what happens then if the FTOW doesn't do his job properly, what are the mechanisms that are supposed to kick in to prevent that from turning into a major incident?
A. The--let's just go a little bit and say that early on in a tracking phase like this it's not uncommon to have inaccurate solutions. And--well, let me just back up a little further. As I just said a minute ago, the teamwork--when you're focused on contact analysis, if that is the focus of the ship at that moment, there is--the teamwork between Sonar and the Fire Controlman and then the Officer of the Deck is behind them. If the contact challenge is significant and we're tracking many contacts or we're in a heightened condition of readiness, forward engaged, we might have more party out there. There'll be maybe a second Fire Control Operator, a couple more officers directly overseeing the development of these solutions.

In a day steaming situation much as GREENEVILLE was involved in, the watch is reduced because the--while the GREENEVILLE is submerged at 400 or 600 feet there's essentially no threat to GREENEVILLE or to the other ships around there, so it's looser track. It's not--that is not--we're not focused on the contact analysis during those maneuvers. We're trying to keep an idea where everybody is. We still don't like to run under even a ship that is just steaming by. I mean that's just not a good practice. We try to avoid that. But, during the periods of time before going to periscope depth over here [pointing laser at exhibit] is what you would refer to as sort of loose tracking going on of this contact. The exact location of that contact is not of critical importance to the submarine at that point. So it's pretty much being done between Sonar and Fire Control, but the moment the decision is made to go to the interface, we're going to go up to periscope depth. We're going to bring the submarine up near the surface, now contact management becomes centrally important. And that's when it's obligatory that the Officer of the Deck become involved--directly involved in the oversight and this team concept kicks in, the three-way team concept between Sonar, Fire Control and the Officer of the Deck, to manage the contacts and understand the contacts with much more resolution than when we're just steaming around at 400 or 500 feet on a trip somewhere else. Does that answer your question, sir?

MBR (RADM STONE): Yes, thank you, that’s helpful.

Questions by a court member (RADM Sullivan):

Q. Captain, we were talking about where SNR is displayed. You talked about the fire control system in Sonar, but where else in the Control Room is it displayed?
A. It's normally--the normal conditions for general tracking, it would be displayed on the remote sonar repeater, which on this particular day on the GREENEVILLE was out of commission, but that would be available to the Officer of the Deck. It's just repeater of what's in Sonar, so he gets to see the sonar display.

Q. And that's--you refer to that as the AVSDU?
A. The AVSDU. It's also a properly maintained Contact Evaluation Plot--plotter is supposed to maintain a track of SNR on that plot as well, so you can see rising SNR information. So, it is on each of the fire control screens and it's on sonar display, it's on a plotted data.

Q. Is it on some other displays? I don’t know what they call it on GREENEVILLE, but a display of contact that you're tracking. It's a display that shows SNR bearings and different contacts.
A. It is on--as I said it's on the fire control--it's right on the fire control data that's coming in to the--to that contact's page. You can look right on the screen for that contact get the bearing, the time, and the SNR of that particular target.

MBR (RADM SULLIVAN): Okay, thank you.

WIT: There is a--you know, it is displayed elsewhere. There's a stand-alone computer in there that takes sonar data for independent analysis. In which case was not--on the day in question, was not employed--not being employed.

CC: Mr. President, I recommend given the lateness of the hour that we recess for the evening.

PRES: Very well. This court will be in recess until 0800 tomorrow morning.

The court recessed at 1625 hours, 8 March 2001.